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ABSTRACT

Because of the size of its budget and the importance and complexity of its operation, the Division of Food Services in the Montgomery County (Maryland) Public Schools was one of the first selected for a series of Management Operations Review and Evaluation (MORE) studies. The Division directs the delivery of food services to all 178 schools in the county. This study describes the food service system: how it operates centrally and at the building level; who bears responsibility for which functions; what procedures are used to track food and funds within the system; and the quality of delivery of food services, assessed in terms of attitudes toward the program, plate waste, and nutritional issues. Various data collection methods were employed, including questionnaires, surveys, and interviews. Records were reviewed and audits conducted of a selected sample of school cafeteria accounting and inventory systems. A stratified random sample of 34 schools was selected for in-depth participation in the study, including a plate waste study and observation of cafeteria operations. An additional 47 schools received questionnaires directed to principals, teachers, and cafeteria managers and workers. Recommendations accompany each of the 12 chapters of this report. The three major cost reduction recommendations are: (1) conversion of all on-site elementary school kitchens to satellite operation, (2) elimination of local tax-supported funding, and (3) investment of surplus food services funds. (Author/MLF)

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MONTGOMERY COUNTY PUBLIC SCHOOLS ROCKVILLE, MARYLAND

Report on School Food Services

March 1982

MORE MANAGEMENT OPERATIONS REVIEW & EVALUATION

EDWARD ANDREWS
Superintendent of Schools

Prepared by the Department of Educational Accountability

EA 015 003

REPORT ON SCHOOL FOOD SERVICES

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EXECUTIVE SUMMARY

REPORT ON SCHOOL FOOD SERVICES

PART I

INTRODUCTION TO THE STUDY

In 1979, the Board of Education of Montgomery County Public Schools (MCPS) directed the superintendent to undertake a series of Management Operations Review and Evaluation (MORE) studies, conducted by or through the Department of Educational Accountability. The School Lunch Program was among the first units selected for study because of the size of its budget and the importance and complexity of its operation. The study is particularly timely because of the financial implications of declining enrollment, continued inflation, and withdrawal of federal support.

The Division of Food Services is responsible for directing the delivery of food services to all 178 schools in MCPS. In FY 1981, food sales to children totaled $4,788,689, with additional revenue from federal and state sources of $8,567,506. Meals served in FY 1981 totaled 659,192 paid meals, 111,738 free meals, 47,911 reduced price student meals, 30,118 adult meals, 8,809 senior citizen meals, and 4,257 child care meals. Food services were provided from a FY 1981 operating budget of $12,429,561 and a staff of 500 positions.

Meals are provided by two types of delivery systems, on-site kitchens and a system of central and satellite kitchens. One hundred twenty-seven schools, including the majority of elementary schools, all middle, junior, and senior high schools, and seven special schools/centers, are served by on-site kitchens. Satellite kitchens serve food prepared at another location, i.e., a central kitchen. The hot pack portion of the lunch is delivered to schools frozen, reconstituted by heating, and served with the fresh cold pack. Four central kitchens prepare the food served in the satellite schools. Fifty-three elementary schools and three special schools have satellite kitchens.

PART II
MANAGEMENT OF FOOD SERVICES

CHAPTER 3

ORGANIZATION, SUPERVISION, AND MANAGEMENT

The Division of Food Services is appropriately located as one of four divisions within the Department of School Services under the associate superintendent for supportive services. The division is organized with a strong central administrative staff to perform countywide functions such as menu planning, purchasing, staffing, and budgeting. The five central kitchens are organized on a functional basis, reporting to a supervisor in the central office. Individual cafeteria managers, satellite workers, and building principals are responsible for supervision of the day-to-day cafeteria operations. Except for the relationship among the satellite worker, field supervisor, and product and system supervisor, lines of communication/responsibility are clearly defined. The MCPS Food Services organizational structure is very similar to that found in five surrounding suburban school systems. Overall, the study found that the Division of Food Services has been very effective in planning for both anticipated and unanticipated changes in the program. Over the years, Food Service staff have conducted a number of formal and informal studies of their operation; and in most cases where the MORE Food Services Study addresses similar topics, the results have paralleled those of previous studies.

The Division of Food Services prepares a yearly operating budget in accordance with standard MCPS budget guidelines. The assistant director determines annual staffing allocations for schools based on school enrollment projections, types of programs being offered, number of meals being served, and the facilities available. All cafeteria managers are required to take a complete inventory of food and supplies on a monthly basis. Some managers, although not required, maintain a perpetual inventory sheet, i.e., a daily recording of all food and supply items used. Although the appropriate data elements are currently being collected in a timely manner for most major financial program management functions, the study identified three areas in which additional data/information is necessary for Food Services to generate further program efficiencies and/or improve program services. The are (1) quantities of food items individual schools are purchasing, (2) menu planning data, and (3) small equipment inventory data.

The reports produced from the information collected are used by Food Services for management/accounting purposes. They provide information to field supervisors for monitoring sales of lunches, determining financial status of cafeterias, and generally evaluating managerial performance. Food Services accounting reports are used to assess the labor situation in cafeterias and determine staffing needs. One major computerized report produced that provides useful management information is the Participation and Receipts Listing.

The Food Services accounting reports provide the basic information necessary for the major functions of program management. Although financial and personnel reports are usually available during the second week following the

end of the month, Food Services accounting reports are often much later and the delay causes management problems.
A Profit and Loss Statement is prepared monthly so that schools can review their own operations, and Food Services can review the overall operation. The lack of three types of data detract from the usefulness of the Profit and Loss Statements in comparing the operation of similar schools. They are labor rates, reimbursements for free and reduced meals, and reimbursement for commodities.

At present, satellite schools are charged only for direct expenses incurred at each school location while food, associated labor, and overhead are charged to the school containing the central kitchen. Revenue is properly shown on the profit and loss statement for each school in the system. This results in unrealistic profits for the satellite schools and losses for the schools containing central kitchens.

The study observed a number of operational factors which significantly affect the profitability of cafeterias and over which food services staff have an inadequate amount of control. Two primary examples of these factors are the selection and evaluation of cafeteria managers and the scheduling of lunch periods.

The overall conclusion is that for day-to-day management and planning the Food Service staff does an excellent job and are to be commended. Multiyear planning of staff, facilities, and delivery systems will however, become increasingly important in the years ahead as decreasing enrollment, higher food costs, and school closings will put additional pressures on participation rates and profit/loss statements. The study found that although planning was being performed, advanced management planning techniques, such as operations research and linear programming, have not been used to optimize such things as the number and location of satellite schools being served by each central kitchen.

Recommendations

- Food Services staff should have greater involvement and influence on decisions made by school principals that affect the efficiency of the Food Services Program. One of the three levels of potential Food Services staff involvement - authority, consultation, and information should be employed in all school decisions concerning cafeteria operations.
- Cafeteria facilities and operations standards should be jointly developed and implemented by representatives of the Office of the Deputy Superintendent and Food Services staff.
- The current responsibilities of the quality control assistants should be clearly defined, documented, and disseminated to all satellite workers.

- The Profit and Loss Statement should be modified so that it better reflects the financial status of individual cafeterias and can be used as a comparative management tool. The modification should:

  1. Include the value of commodities used by individual schools as if they represented food purchased

2. Charge individual schools the average labor rate for each position class rather than the actual hourly rate of the employee filling the position

3. Consider income for all lunches served as a paid lunch equivalent

   It should be noted that this recommendation, in part, is being implemented though the new School Lunch Inventory Control System.

- Increase the division's capability for multiyear planning and utilization of advanced management planning techniques.

CHAPTER 4

STAFFING

The overall finding of the study related to major personnel and staffing issues is that there are no overriding problem areas and that practices appear to be consistent with those of surrounding school districts. Except for an increase in FY 1982 for the new Food Service Warehouse, there has been a slight decrease in the total number of Food Service positions from FY 1978 to FY 1982. Although enrollment declined by 13,782 students over the same four-year period, the number of meals served increased by 632,852. As the increased number of meals served were provided by fewer positions, the data indicates that a 10 percent increase in productivity was achieved between FY 1978 and FY 1982.

The Food Service staff is predominantly female and white. The average age of the 768 Food Service workers in FY 1980 was 46 years old. Food Service employees have a fairly long length of service in each position classification. Middle managers at both the school and central administration level are experienced in their respective positions and are long-term school system employees. Seventeen percent of the 750 people employed in the Division of Food Service terminated their employment with MCPS during FY 1980. The overall turnover rate for Food Services employees is significantly higher than for maintenance and personnel employees but lower than in the highly technical fields of data processing, planning, and construction. The Food Services assistant director determines staffing allocations for each school cafeteria by using a set of informal unwritten guidelines which are based on the type of cafeteria and the level of the school. The minimum staffing allocation for on-site elementary school cafeterias has been established at one 7-hour per day cafeteria manager and one 4-hour per day Cafeteria Worker I. The standard used for on-site elementary cafeterias is 14 meals served per person-hour of staffing. The range currently being experienced by on-site elementary cafeterias is 12-18 meals per person-hour.

The minimum staffing allocation for secondary schools is one 7-hour per day cafeteria manager and one 6-hour Cafeteria Worker II. Because of a la carte offerings, the criteria for staff allocations beyond the minimum at the secondary level is dollar volume of business rather than the number of meals served. The standard is $12-$16 of revenue per person-hour of staffing.

Performance standards are informal and unwritten. Overall, MCPS seems competitive with the pay scales of surrounding school districts. MCPS cafeteria workers generally earn more than their counterparts and cafeteria managers generally earn less than most of their counterparts. In general, Food Services employees are highly satisfied with their jobs and enjoy the work environment. Although many cafeteria managers and cafeteria workers expressed a feeling of being understaffed, data for surrounding districts does not seem to support that perception. The number of meals served per Food Services staff member for MCPS is in the midrange of the data for five other school districts. The process by which staff are allocated to schools (and the criteria used in these decisions) will become more important as increased movement of staff and cafeteria operations are contemplated in the years ahead.

Recommendations

- The Department of Personnel should continuously receive applications for Food Service positions and maintain a cadre of applications on file.

- Continue to gauge overall staffing levels to the number of meals served rather than student enrollment. Formalize and disseminate staffing and performance standards and more closely monitor cafeteria operations by these standards.

- Consider ways to decrease the number of cafeteria managers supervised by each field supervisor. Current operations should be monitored closely to determiner loss of cafeteria efficiency which can be attributed to the reduction from five field supervisors to three.

- Expand cafeteria staff in-service training in the areas of food preparation, nutrition, and federal regulations.

CHAPTER 5

BUDGETING, COSTS, AND ACCOUNTING

Funds to directly support the MCPS Food Services Program are found in three separate categories of the Operating Budget. Category 10 contains the costs associated with the central administration of the Food Services Program and is funded from local tax sources. Category 9 includes most of the fixed charges for the administrative positions budgeted in Category 10. Category 61 contains all other directly identifiable budgeted funds associated with the delivery of food services. This category is established as a self-supporting fund and is funded by income from the sale of meals plus reimbursements received from federal and state sources.

In FY 1982 the actual funds allocated in the Operating Budget to support the Food Services Program were $593,034. Montgomery County Public Schools also assists the Food Services Program by providing in-kind support services on a nonreimbursable basis. Food Services is not charged for (1) utilities necessary to operate kitchens, (2) four of the five account clerks assigned to

maintain Food Services accounting, (3) data processing application development or operation, (4) maintenance of kitchen equipment, (5) gas/oil and maintenance of the Food Services delivery trucks, and (6) transportation charges to pick up and deliver some commodities and other supplies. Data obtained from other Maryland local educational agencies shows that only two of the other LEAs surveyed support the Food Services Program with Category 10 funds, and these were considerably less than MPCS. In addition, all other LEAs charge the Food Services Programs for at least two of the listed major services. The issue is one of policy rather than management: to what extent should MCPS local tax dollars support the Food Services Program?

The study found, roughly a year ago, that parents and students were in agreement that $.80 was the maximum they were willing to pay for a regular lunch. When compared to the other large counties in the Washington-Baltimore area, MCPS's lunch prices are currently among the lowest. As lunch price increases usually have a negative impact on participation rates, the study analyzed participation from October, 1980 to October, 1981. During this period the price of both the regular elementary and secondary lunches was raised $.20 with a resulting decrease in participation of 8 percent. Senior highs decreased only 5 percent, while junior highs lost 11 percent.

The total cost of Food Services direct labor in FY 1980 was $4,188,521, which was 40 percent of the total Food Services expenses. Another $1,192,337 (11 percent) was spent for fixed charges associated with direct labor. In the same year, $4,508,671 was expended for food (43 percent), $551,562 (5 percent) for supplies and materials, $50,839 (0.005 percent) for furniture and equipment, and $7,962 (0.001 percent) for travel and other expenses.

At present MCPS does not invest surplus available operating Food Services Funds. Food Services Funds are not maintained in a separate account but are comingled (although identifiable) with other MCPS monies in the General Fund. MCPS frequently uses Food Services Funds to pay non-Food Services expenses. As a result, MCPS makes less frequent and smaller requests for operating funds from the county government. This allows the county government to maintain and invest MCPS operating funds for a longer period of time. A survey of five other large school systems in Maryland found that all five maintained a separate account for Food Services Funds, invested these funds, and earned $50,000-$170,000 per year in interest for the Food Services Program. U.S. Department of Agriculture regulations state that all food services program income must be used for program purposes. To ensure full compliance with these regulations, MCPS should consider establishing a separate Food Services account and investing any surplus for direct return to the Food Services Program.

The closing of schools and the resulting increased enrollment in surrounding schools can have an impact on the operation and cost of the school lunch program. Food Services has, however, had little involvement with school closing decisions or the development of the 15-year facilities plan.

The Division of Food Services provides meal service to a number of student and adult groups on a cost reimbursable basis. As MCPS does not have the ability to identify the cost of in-kind services provided to Food Services, costs for in-kind services being provided to these groups are not being recovered from outside agencies to which the Division of Food Services provides contract services.

Half of the 34 schools selected for participation in this study were visited for an audit of cafeteria financial records and procedures. In general all schools visited were found to be operating in an acceptable manner. However, two financial control problems, (control of cash and security of food inventories) were identified and warrant attention.

Recommendations

- The superintendent and the Board of Education should review the current policy of providing local tax support to the Food Services Program. Considerable reductions in the General Fund Operating Budget could be obtained by a decision to reduce or eliminate this support.

- MCPS should create a separate central Food Services account into which all revenues (and surplus) should be deposited and out of which all Food Services expenses should be paid. Cafeteria receipts should be deposited daily in no more than five to eight individual accounts and removed by the Division of Accounting twice weekly. Procedures should be developed whereby daily balances of the Food Services account can be determined. The director of the Department of Financial Services should be given the authority and responsibility to invest daily surplus Food Services Funds in short-term (1-30 day) securities such as repurchase agreements. Under our interpretation of Department of Agriculture regulation the interest earned from these investments must be used for the Food Services Program.

- Investigate with the Maryland State Department of Education what, if any, procedural changes need to be made to ensure that MCPS receives the maximum Food Services cash reimbursements at the earliest possible date and that these funds are deposited in and invested from the central Food Services account.

- Alternatives by which Food Services Funds and other reimbursable funds can be removed from the Operating Budget should be explored.

- The Division of Food Services should be involved earlier in discussions concerning school closings. The impact of school closings on the ability of the Division of Food Services to provide cost effective quality meals should be considered. When school closing decisions are made, procedures for the sale of surplus kitchen equipment should be initiated early enough to complete the process prior to the closing of schools.

- Secondary schools should account for a la carte item receipts separately and generate control totals rather than the current practice of determining a la carte receipts by subtraction. Consideration should be given to the purchase of electronic cash registers for this purpose.
- All school food and supply storage areas should be locked with special keys and be under the control of the principal and/or cafeteria manager.

- If MCPS implements a cost accounting system, an administrative overhead fee to cover MCPS in-kind contributions to food services should be determined and added by the Division of Accounting to all invoices sent to outside agencies to which the Division of Food Services provides services.

CHAPTER 6

OPERATION OF SUPPORT FUNCTIONS

All food and other supplies are ordered by cafeteria managers and satellite workers from a series of 10-12 approved bid lists. Vendors make deliveries directly to schools in accordance with procedures specified in the bid. All vendor contact is handled centrally by Food Services staff rather than by individual cafeteria managers. Most cafeteria managers reported that the present ordering procedures posed no problems. The procurement process from the initiation of bid specifications to contract award averages 14 weeks. The demonstration, testing, and evaluation of new/substitute products, equipment, and supplies is a prime responsibility of the central administrative staff of the Division of Food Services.

All cafeteria managers are required to take a complete inventory of food and other supplies on a monthly basis. Purchased foods are valued at the price shown on the latest invoice or updated bid list and commodities are valued from a list provided periodically by the Maryland State Department of Education. Monthly inventory data is utilized to varied degrees by different managers; some managers indicated they made little or no use of the data while other managers said they used the information for ordering. All inventories are currently conducted and maintained manually. Inconsistencies in the pricing of inventories and the exclusion of commodities make the comparison of food expenses from one school to another very distorted.

Present data processing support to the Division of Food Services can be divided into two categories: those data processing applications which were designed for general MCPS administrative purposes and those applications which have been specifically designed for the use of Food Services. In the spring of 1981, the Division of Food Services submitted the following seven "Summary of Need for New/Additional Data Processing Support" statements to the Task Force on Long-Range Planning for Future Use of Computer Technology

- Inventory Control System
- Cafeteria Accounting Improvements
- Identification of Hidden Costs
- Student Preference Surveys
- Free and Reduced Price Meal Applications
- Equipment Schedule
- Average Hourly Labor Rate per Classification

The inventory control system to support the new Food Services Warehouse is currently under development by the Department of Management Information and Computer Services (DMICS). Some initial design work for a basic capability to monitor free and reduced price applications has been started by DMICS staff. Although not intended to meet all the requirements of the needs statement, it will provide basic capabilities at a much earlier date. None of the other five Food Services need statements were recommended for development in the task force report.

Montgomery County Public Schools participates in the National School Lunch Program and also receives funds to support the lunch program from the State of

Maryland. Except for a half cent decrease in FY 1982, the state cash reimburse- ment for free and reduced price meals remained consistent between FY 1980 and FY 1982. Federal cash reimbursements for reduced price meals started started in FY 1980 at $.8325 per meal, reached $.920 in FY 1981, and decreased to $.6925 in FY 1982. The federal reimbursement for free meals increased steadily between FY 1980 and FY 1982. The biggest change in the reimbursement for full price meals occurred during the 198182 school year when it decreased from $0.1850 to $0.1050 per meal. As of this writing, the Reagan Administration plans to ask for further reductions from the current $0.1050 to $0.0520 in July, 1982 and then totally phasing out the full price cash reimbursement in 1983. Assuming that all of the reduction would be passed on to the purchaser, the price of the regular MCPS lunch would have been raised from $0.65 to $1.08 in FY 1981 if the $3,626,840 of federal cash reimbursements were withdrawn. If FY 1982, the $.80 elementary lunch would have to go to $1.23 if this same level of federal cash reimbursements were withdrawn.

In addition to cash reimbursement for meals served, the federal government supports the school lunch and breakfast programs by providing large quantities of a variety of food commodities. MCPS received commodities with a dollar value of $1,799,194 in FY 1980. The primary difficulty of receiving commodities is the lack of lead time in notifying school districts that particular commodities have been allotted and/or shipped. However, most of the storage and distribution problems associated h the receipt of commodities should be resolved when the new central Food Services Warehouse begins operation in February, 1982.

Recommendations

- A postimplementation evaluation of procuring, ordering, and distributing procedures and computer application currently under development for the new Food Services Warehouse should be conducted as part of the future Procurement and Supply Management MORE Study.

- The Division of Food Services should consider the development (at its own expenses) of the data processing requirements it considers to be a priority and which are not recommended in the Report of the Task Force on Long-Range Planning for Future Use of Computer Technology.

- Food Services staff should continue to lobby and encourage the continuance of the federal cash reimbursement and commodities programs.
- A computer-supported inventory evaluation module should be developed whereby individual schools report only "quantities on hand" and individual item prices are maintained on a computer data base. Such a system would (1) require less time by cafeteria personnel, (2) provide more accurate date, and (3) make available standard item pricing among schools.

- For purposes of comparing school expenses, commodities should be valued in schools the same as the equivalent purchased items. It is anticipated that the new School Lunch Inventory Control System when completed will accomplish this.

- The Department of Management Information and Computer Services should continue the development of the School Lunch Inventory Control System and

include a menu planning/costing module and a small equipment inventory module in the second phase of the development.

CHAPTER 7

MANAGEMENT OF FREE AND REDUCED PRICE MEAL PROGRAM

School districts participating in the National School Lunch and School Breakfast Programs are required to provide free and reduced price meals to any child who qualifies based on family income and size guidelines established by the Secretary of Agriculture. Montgomery County Public Schools participates in both of these programs and in FY 1981 served 1,689,964 free or reduced price lunches and 733,977 breakfasts. Except for the additional functions of student eligibility identification, verification, and the logistics of maintaining the anonymity of participants, there is no difference in central administration or school-based functions. The Department of Agriculture annually sets the maximum family income for eligibility in the Free and Reduced Price Lunch and Breakfast Programs as a percentage of the poverty level. Between FY 1981 and FY 1982 the maximum income level for a free lunch for a child in a family of four was raised 7 percent ($720) to $10,990. With inflation raising most family incomes by 10 percent or more, the net effect of this action was to reduce the number of students eligible for a free meal. Consequently, 1,233 fewer students were eligible for a free meal in FY 1982 than in FY 1981. Approximately $180,000 of local funds would be required to increase the maximum income eligibility guidelines to the level necessary to return to the FY 1981 participation level.

Federal regulations require school districts to establish and monitor procedures whereby accurate records are maintained of those students who are eligible to receive free and reduced price meals. Schools provide an application form to an adult member of a child's family on which household income and family size are self-reported. When this family-furnished information meets stated eligibility criteria, the child is certified as eligible to receive lunch and/or breakfast (and milk) at free or reduced prices. Implementing and monitoring the Free and Reduced Price Meals Program imposes a heavy burden on the Division of Food Services. It is evident from the record-keeping problems posed by the program and the excessive amount of staff time required to maintain and update the program records that the burden needs to be alleviated. Tracking the status of applications is difficult and can be time consuming because of the existence of records at the schools and at the Food Services central office.

Recommendation

- The computer-supported application for the establishment, maintenance, and reporting of students eligible for free and reduced price lunch should be continued and completed as soon as possible. Such a system will make it possible to (1) enter and update the eligibility file from a remote terminal in the Division of Food Services, (2) update the eligibility file when students withdraw or transfer, and (3) update the eligibility file when federal income guidelines change.

PART III
DELIVERY OF FOOD SERVICES

CHAPTER 8

ATTITUDES TOWARD THE FOOD SERVICES PROGRAM

It has long been recognized that the perceptions and attitudes of students and parents toward the school lunch program will significantly influence their participation in the program. To examine feelings toward the lunch program, surveys were distributed to students, parents, teachers, principals and cafeteria workers. With a few exceptions, the overall attitude of parents was positive. The majority of parents responding to the survey indicated that (1) the lunch tasted good to their children, (2) their children liked most of the food served, and (3) the food is good for their children. Parents were not as positive about their children's enjoyment of the school lunch or the pleasantness of the lunchroom. Parents of secondary students had less positive feelings than parents of elementary students.

Students at the elementary level displayed positive attitudes toward the lunch program. There was a strong and consistent decline in positive attitudes as grade level increased. For instance, nearly 70 percent of the fourth graders agreed that the food tasted good most of the time. Less than 40 percent of the eleventh graders agreed with that statement.

Elementary teachers were significantly more positive about the school lunch program than were secondary teachers. Middle/junior high school teachers showed a slightly more positive attitude than did senior high teachers. The attitudes of the senior high teachers were very negative.

Principals generally had a positve attitude toward the school lunch program in their school. With a few exceptions, type of school did not make a difference in the principal's attitude toward the school lunch program. Principals in all types of schools felt strongly about the lack of variety in the meals. A third of the senior high principals said that students have to wait too long in line to get lunch.

An analysis of factors associated with positive attitudes showed that students and parents of students who bought the school lunch more frequently had more positive attitudes. Also, for teachers and principals the more frequently they ate the lunch, the more positive their attitudes. The more positive the principal felt about the school lunch program, the more likely he or she was to believe that students, parents and teachers saw the program positively.

Perceptions about changes needed in the school lunch program were obtained by asking students, parents, teachers, principals, and cafeteria staff to select from a list of possible changes the changes they would most like to see in their school lunch program. The findings were (1) "making the lunch taste better" was selected most often by students in all grades and also by parents, (2) school staff and parents selected "put more variety in the menu from day to day" significantly more often than did students, and (3) many teachers and parents selected "put more raw vegetables in the lunch", whereas students,

principals, and cafeteria staff rarely selected it. Most groups, except cafeteria workers, selected the change "give students more food to choose from" relatively often. Senior high school students, parents of senior high students, and cafeteria staff ranked "reduce the amount of time in line" very high, whereas this change was not often selected by the other groups. Another approach to evaluating and thus improving attitudes toward the school lunch program is to determine food preferences of students and parents. The study found that parent food preferences for their children are significantly different from student preferences. As one might expect, parents consistently want their children to eat vegetables and fruits more frequently. Likewise, students consistently want to eat desserts and sweets more frequently than parents want them to have them. As grade increased, student food preferences came closer to the food preferences of parents. If one assumes that the parent food preferences reported in the study represent nutritious alternatives, then students' nutritional values are improving with grade.

Parents and students are in agreement that "I don't like the food" and "I'd rather bring a lunch" are the two primary reasons for not buying the school lunch. The cost of the lunch, preference for a la carte foods, and the wait in line were the next most frequently mentioned reasons by both students and parents. One-third of the eleventh grade students cited "waiting in line" as a reason for not buying the school lunch.

Nine multiple choice questions were developed to determine how much parents know about the school lunch program in MCPS. The results indicate that parents' knowledge of the Food Services Program is extremely limited.

Recommendations

- Continue to explore alternative innovative programs directed toward improving the acceptability of the Food Services Program particularly at the secondary level. Examples of alternative programs which could be investigated are (1) hot and cold sandwich combos which resemble the food offered in fast-food chains, (2) salad bars, and (3) alternative conventional lunches. Formally evaluate programs which are currently being piloted to determine their acceptability and transferability to other schools. These alternatives provide students with a variety of more desirable food items and can generally be served more efficiently, thus reducing the time spent in line.

- Investigate alternative lunch period arrangements, physical facilities, and staffing patterns which will decrease the time secondary students have to wait in line to be served. A school by school assessment should be made of the cafeteria's maximum capacity per lunch period and compared to the number of students scheduled per lunch period. Since Food Services administrators have no authority over school scheduling, implementation of this recommendation will have to be a cooperative effort with the area offices and school principals.

- Develop ongoing procedures for informing parents about the operation of the lunch program. Possible methods might be presentations before parent groups, information brochures, or articles for school newsletters.

The survey findings also point out the need for nutrition education particularly for elementary students. This will be addressed in the next two chapters.

CHAPTER 9

PLATE WASTE

The issue of plate waste is central to school lunch programs and is a primary focus of the MORE Food Services Study. Data for the plate waste portion of the study were collected for two consecutive days in each of 34 school cafeterias. Data collectors coded food items, initial servings, type lunch, sex and grade of student, and amount of each food item remaining at the end of the meal. These data were recorded for each of the four types of lunches: the regular school lunch, the alternate lunch, lunch brought from home, and a la carte.

Overall, the study found that (1) the consumption of meat/protein items was generally high, (2) with a few exceptions, the consumption of bread was also generally high, (3) consumption of fruit food items varied considerably in the regular school lunch, (4) consumption rates for most vegetables were low, and (5) consumption rates for desserts as a whole were high. Although the number of food items common to both the regular and alternate lunches was relatively small, several observations are noted. With only a few exceptions, consumption was higher for food components in the alternate lunches. A comparison of plate waste between lunches brought from home and the regular school lunch was difficult because of the differences in the food items contained in each type of lunch. For those food items which were common to both types of lunches, consumption appeared to be slightly higher for lunches brought from home.

An analysis of consumption data by grade showed that (1) the consumption of meat/protein food items increased with grade level, (2) with a few exceptions, grade did not make a difference in the consumption of vegetables, and (3) grade did not impact on the consumption of fruit food items.

Plate waste is a complicated problem and is affected by numerous variables, over many of which Food Services has little control. Food Services and individual cafeteria managers have tried many different approaches to reducing plate waste. One effort to reduce plate waste at the secondary level has been the federal Offer vs. Serve Program. Students may select as few as three of the five food items and still meet Type A lunch requirements. This program has allowed cafeteria managers to reduce plate waste by expanding student choice while maintaining control over production. In October, 1981, federal regulations were modified to allow the expansion of the Offer vs. Serve Program to the elementary level; and although it is too soon to evaluate the results, MCPS has implemented Offer vs. Serve in elementary schools.

Recommendations

- o Alternatives for increasing consumption of the vegetable/fruit food component should be explored.

- o Emphasis should be given to nutrition education programs as a means of reducing plate waste.

CHAPTER 10

NUTRITIONAL ISSUES

Over the years, individual parents and community organizations such as the Montgomery County Council of PTA's have expressed interest and concern for establishing and maintaining high levels of nutritional quality in meals served in schools. Consequently, this study addressed several issues which deal with nutrition.

An analysis of the amounts of nine nutrients supplied by school lunches and bag lunches brought from home was conducted. The nutrient analysis calculated the average amount of nine nutrients in school menu lunches over a five-day period. Hypothetical bag lunches were also analyzed for their nutrient content. For secondary students, typical a la carte lunches were included as well. The nutrients examined were calories, protein, fat, calcium, iron, sodium, Vitamin A, riboflavin and Vitamin C. Sugar content was also examined. Recommended Dietary Allowances (RDA) are defined as levels of intake of essential nutrients considered to be adequate to meet the known nutritional needs of practically all healthy persons. The study considered the quantity of a nutrient adequate if it met at least 90 percent of one-third of the RDA. For some nutrients, excessive intake may be harmful. Calories, Vitamin A, and sodium were considered excessive if they were greater than 200 percent (2 times) the RDA or National Research Council (NRC) recommended levels. To construct a measure of sugar, the number of foods in a daily menu to which sugar was added as a part of production was counted (e.g., cake and chocolate milk). These counts were added together for a week and divided by five days to determine the average number of sugar-added foods served in each lunch. The nutrient content of the foods were derived from (1) "Nutritive Value of American Foods in Common Units," Agriculture Handbook 456, USDA, 1975, (2) food labels, and (3) manufacturer's information. The U. S. Department of Agriculture requires that school lunch menus contain at least four food components served as five food items to be approved for financial reimbursement. USDA-required school lunch food items are (1) meat/meat alternate, (2) fruit/vegetable, (3) a second different fruit/vegetable, (4) bread/bread alternate, and (5) milk. All MCPS school lunch menus examined for the nutrient analysis provided all USDA-mandated components for both daily and weekly requirements.

A standard recommended, but not required, by the federal government is the provision of approximately one-third of the child's Recommended Dietary Allowances (RDAs) of nutrients. Because of the nutritional superiority of the RDA standard and because of parental concern with the nutrition issues, the MORE Study of School Food Services also evaluated school lunch menus with respect to the percentage of the RDA provided. The results of the nutrient analysis showed that, although the one-third RDA requirement for all nutrients was not completely met for any age by sex grouping with the school lunch menus, meals were of high nutritional value. The regular and alternate

Elementary lunch menus (with milk) for 7-10 year olds met all RDA requirements and NRC guidelines, except calories. The remainder of the elementary school lunch menus were below the designated range in some combination of calories and iron. In fact, iron was below the designated range in most lunch types except elementary lunches for ages 7-10. Secondary school lunch menus (with milk) met all the RDA requirements with the single exception of iron. The hypothetical lunch brought from home for students in the grades 7-10 age group met all of the RDA nutrient requirements. The bag lunch for both male and female secondary students also met all of the RDA nutrient requirements. Although no regular school lunch met all the RDA nutrient requirements and NRC guidelines, the lunch menus met more nutrient requirements than the General Accounting Office (GAO) found in a recent study of seven school districts around the country.

Coded observations of food consumed in actual lunches were analyzed to learn what proportion of students eat various kinds of food. The findings were that for students who buy the school lunch or bring a lunch from home, the overwhelming majority ate at least one-half serving of a meat/protein food and a bread food. Substantially fewer students who purchased a la carte lunches had meat/protein or bread foods for lunch. The proportion of students who ate vegetables or fruit or drank milk was higher for the school lunch than for lunch brought from home or purchased a la carte. The percentage of students who ate salt snacks for lunch was highest for the lunch brought from home and lowest for students who bought the school lunch. Some small differences were found between male and female students. The biggest difference was for meat/protein foods in the a la carte lunch where 50 percent of the male students ate a meat/protein food in their lunch compared to only 34 percent of the females. An analysis by grade level showed that more students in the upper grades ate at least half a serving for meat/protein, bread, vegetable and dessert foods in the school lunch. For lunch brought from home, grade level had little effect on the percentage of students who ate a particular type of food. An analysis was conducted of foods eaten by students to learn whether students ate a balanced meal. A "balance index" was calculated for each individual by adding the actual quantity of food consumed up to a maximum of one serving for meat/protein, bread and milk, and two for fruit/vegetables. Each child's sum was divided by 5 to give a range from 0 to 1. The higher the index, the closer the student's meal was to containing one serving from each of the food groups. The findings for this analysis were: (1) for all grade levels, the average balance index for students who ate the regular or alternate school lunch was significantly higher than for students who brought lunch from home, (2) except for Grade 7, the balance index for the school lunch increased with increasing grade level, (3) the balance index was higher for males than females at every grade level, and (4) a la carte meals consistently showed a significantly lower balance index than either bag lunches or school lunches.

Over the years, parents have frequently expressed concern over the amount of certain food substances that their children receive in the school lunch program. To assist in addressing this concern, students and parents were asked to what extent they/their children eat foods which were high in selected substances such as salt, sugar, artificial food coloring, and general preservatives. Overall, the study found that (1) parents and students were in general agreement that students "sometimes" or "all the time" eat (outside of school) foods which are high in salt, high in sugar, deep fat-fried, and contain artificial coloring and preservatives and (2) there was no difference by grade for the consumption of these foods.

Recommendations

- o Methods to increase the level of calorie content in elementary school lunches and iron in all lunch types should be explored.

- o Emphasis should be given to nutrition education programs as a means of improving students' eating habits.

CHAPTER 11

ALTERNATIVE FOOD PREPARATION AND DELIVERY SYSTEMS

Most school districts, like MCPS, have concentrated on balancing the benefits and costs of two types of delivery systems (1) on-site preparation and delivery of meals for students within a given building and (2) one of several types of satellite arrangements where food is prepared either in bulk or in prepackaged form and transported to a group of schools for serving. In MCPS, central kitchens are used to prepare prepackaged meals for distribution to satellite elementary schools. Schools receiving prepackaged meals reconstitute the frozen hot pack by heating and serving with the fresh cold pack. MCPS has for years been a leader in the development and use of the prepackaged satellite delivery systems. Visits to central kitchens have shown them to be smooth, efficient operations. They are generally well-designed and make effective use of mechanical equipment for both the cooking of food and the assembly of the hot and cold packs. All five central kitchens are currently operating at less than full capacity. The study found that the per meal cost to serve the 1.5 million satellite meals was roughly two cents less per meal than the 2.7 million on-site meals ($1.1791 vs. $1.1973). Although both food and supplies are more expensive for satellite meals, the significantly lower labor costs more than make up the difference. Labor costs are lower for satellite meals because of the economies of scale associated with central preparation of meals and the lower level positions assigned to satellite schools.

Another approach to comparing the cost of the two types of delivery systems is to project the total profit(loss) to MCPS if all elementary schools operated under one of the two systems. Under an arrangement of all on-site kitchens, it is projected that MCPS would have lost slightly less than $.04 per meal or $153,276 in FY 1981. In a similar fashion costs were projected with the scenario that all elementary schools had been converted to satellite operation. Under such an arrangement, significant labor savings occur which reduce the cost per meal by slightly less than $.20 ($0.1937 per meal). This lower cost per meal would have projected a profit of $821,905 in FY 1981. Thus, although the cost difference per meal of satellite vs. on-site meals is currently $.02, economies of scale increase the savings to almost $.20 per meal if all elementary schools were converted to satellite operation.

In general, students and parents from both on-site and satellite schools showed positive attitudes toward the school lunch program. Parents with children in schools with on-site cafeterias showed no significant attitude differences than parents whose children attended schools with satellite cafeteria operations. Students from schools with on-site kitchens, however, showed a more positive attitude toward the school lunch program than did students from schools with satellite kitchens.

In general, the attitudes of teachers in schools with on-site kitchens are more positive than teachers in schools with satellite kitchens. Teachers at on-site schools felt somewhat more positive about the food served to students and the cafeteria environment than did teachers in satellite schools.

Data indicated that principals from schools with on-site kitchens have slightly more positive attitudes toward the school lunch program than do principals from schools with satellite kitchens. The difference, however, was not as great as that shown for teachers.

An overall attitude score was computed for each respondent by giving points for the degree of agreement/disagreement for each positive and negative statement. Attitude score data generally confirms earlier findings that (1) parents had a more positive attitude toward the school lunch program than do students, (2) principals, likewise, had a more positive attitude than do teachers, and (3) all groups from on-site schools had a slightly more positive attitude than their counterparts from satellite schools.

Plate waste data were analyzed by type of delivery system, and significant consumption differences between on-site and satellite kitchens were found in 17 of the 49 individual food items (34 percent). All differences showed greater consumption for the on-site schools. Conversely, there was no significant difference in plate waste between on-site and satellite schools for 32 of the 49 items (64 percent). The nutrition index for all three grades was slightly higher in on-site schools than in satellite schools. There was an increase in the nutrition index with increasing grade in both satellite and on-site schools.

The overall finding is that the MCPS prepackaged satellite delivery system is the most cost effective method currently available for serving lunch in elementary schools. It has been projected that the conversion of all elementary schools to satellite operation in FY 1981 would have saved approximately $822,000 over the present arrangement of 75 on-site and 56 satellite elementary schools. The question to be addressed is whether the cost savings to be obtained from satellite operation is worth some modest loss in positive attitude toward the school lunch program. Conversion of on-site kitchens to satellite operation can be accomplished with little physical modification. It should be noted the present five central kitchens are currently underutilized and could accommodate an all-satellite operation. In anticipation of the possible switch to all-satellite elementary school kitchens, steps should be taken now to address the problem of surplus on-site cafeteria managers which will develop from both the closure of on-site schools and the conversion to satellite operation.

Recommendations

- o MCPS should convert all existing elementary school on-site kitchens to satellite operation over the next few years.

- o A detailed study should be conducted of the capabilities, costs, and alternative central kitchen configurations to serve the expanded number of satellite kitchens.

- o If all elementary schools are converted to satellite operation, then the three field supervisor positions and the product and systems supervisor position should be converted to

  - A supervisor of central kitchens who would have direct responsibility for supervision of all central kitchens and 30 elementary satellite schools

  - A supervisor of elementary satellite schools who would have responsibility for supervision of the remaining 72 elementary satellite schools

  - A supervisor of middle and junior high schools who would have responsibility for the 24 middle, junior high schools

  - A supervisor of senior high schools who would have responsibility for the 22 senior high schools

- o One of the three satellite quality control assistants should be assigned to the central kitchens supervisor and the other two to the elementary school satellite supervisor.

- o If the number of satellite schools in operation in FY 1983 is reduced from present numbers by school closings, then central kitchens operations should be consolidated. In such a situation, the two central kitchens without cooking facilities should be closed.

- o Cost accounting data should be collected, and the cost to prepare frozen hot packs should be accurately calculated and compared to the cost of purchasing hot packs from commercial vendors.

- o The school system should give consideration to the conversion of at least some middle and junior high school on-site kitchens to satellite operation once all elementary schools are operating efficiently under satellite.

- o Ways should be explored to improve the quality and acceptance of satellite meals to increase satisfaction levels. This may require an education outreach program to alter perceptions of the satellite operation, rather than solely changes in food preparation and delivery.

PART IV
SUMMARY

CHAPTER 12

SUMMARY OF MANAGEMENT ALTERNATIVES

The management alternatives presented here focus on the results and implications of the various combinations of the three major cost reduction recommendations: (1) conversion of all on-site elementary school kitchens to satellite operation, (2) elimination of local tax-supported funding, and (3) MCPS investment of surplus Food Services Funds.

Of the three major cost reduction recommendations, the elimination of local tax-supported funding has the greatest impact on the Food Services Program and on the MCPS Operating Budget. If considered separately, the elimination of the full $593,000 in FY 82 support in the operating budget would require a $.07 increase in the price of a regular lunch. Charging the Food Services Program for all MCPS-provided services (estimated at $379,000) would require an addition $.04 price increase per lunch. The other two cost reduction recommendations, however, (conversion to satellite operation and investment of Food Service Funds) can be implemented without affecting the Food Services revenues and thus do not have a negative impact on the price charged for meals. In fact, the savings generated from these recommendations could be used to (1) eliminate the price increases discussed above, (2) reduce the current price of lunches or (3) offset potential future increases that might be proposed because of inflation or further reduction in the level of federal cash reimbursements.

The amount of savings or revenue generated by each recommendation is based on FY 1981 data and assumes a full year's operation under the recommendation. As Food Service staff will need time to study and plan for the phased implementation of these recommendations, some, but certainly not all, of the projected cost reductions should be available in FY 1983. The meal price increase projections generated in some alternatives are also based on FY 1981 data and will have to be adjusted forward for inflation to the planned implementation year.

The net cost savings and the impact on meal prices of these three recommendations can vary widely depending on the combination of the three recommendations implemented and decisions as to where to apply the generated savings. To illustrate this point several of the numerous possible alternatives are presented:

- If management's objective is to maximize cost reductions and to accept the resulting impact on the price of meals, $1,944,000 could be saved with a resultant $0.11 increase in the price per meal. This would make the Food Services Program entirely self-supporting, as most others in Maryland.

- If the objective was to use all cost savings to off-set potential future meal price increases, the $972,000 savings could offset a future price increase of $0.12 per meal.

- Another possible alternative would generate $1,565,000 in savings, while causing an approximate $0.07 increase in the price of meals. This alternative recommends (1) the conversion of all elementary schools to satellite operation, (2) the investment of Food Services Funds, and (3) the elimination of the direct operating budget support (but not charging Food Services for MCPS services).

- An additional alternative could result in approximately $1 million ($972,000) of tax-supported funds being reduced from the operation budget without a negative impact on the price charged for lunch. In this case, all three major cost reduction recommendations are implemented, and the cost savings generated by conversion of all elementary schools on-site kitchens to satellite operation and investment of Food Services Funds are used to offset the loss of revenue ($593,000) and additional expenses ($379,000) caused by elimination of all MCPS support to the Food Services Program.

This last alternative is recommended.

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PART I

INTRODUCTION TO THE STUDY

SUMMARY OF PART I

INTRODUCTION TO THE STUDY

In 1979, the Board of Education of Montgomery County Public Schools (MCPS) directed the superintendent to undertake a series of Management Operations Review and Evaluation (MORE) studies, conducted by or through the Department of Educational Accountability. The School Lunch Program was among the first units selected for study because of the size of its budget and the importance and complexity of its operation. The study is particularly timely because of the financial implications of declining enrollment, continued inflation, and withdrawal of federal support.

The Division of Food Services is responsible for directing the delivery of food services to all 178 schools in MCPS. In FY 1981, food sales to children totaled $4,788,689, with additional revenue from federal and state sources of $3,567,506. Meals served in FY 1981 totaled 659,192 paid meals, 111,738 free meals, 47,911 reduced price student meals, 30,118 adult meals, 8,809 senior citizen meals, and 4,257 child care meals. Food services were provided from a FY 1981 operating budget of $12,429,561 and a staff of 500 positions.

Meals are provided by two types of delivery systems, on-site kitchens and a system of central and satellite kitchens. One hundred twenty-seven schools, including the majority of elementary schools, all middle, junior, and senior high schools, and seven special schools/centers, are served by on-site kitchens. Satellite kitchens serve food prepared at another location, i.e., a central kitchen. The hot pack portion of the lunch is delivered to schools frozen, reconstituted by heating, and served with the fresh cold pack. Four central kitchens prepare the food served in the satellite schools. Fifty-three elementary schools and three special schools have satellite kitchens.

CHAPTER 1

BACKGROUND AND STUDY DESIGN

Background

In 1979, the Board of Education of the Montgomery County Public Schools (MCPS) directed the superintendent to undertake a series of studies of all units of the school system except school-based instruction. These Management Operations Review and Evaluation (MORE) studies, conducted by or through the Department of Educational Accountability, will address the following broad questions:

- Can any functions or services of the unit be eliminated?
- Can any functions or services be provided in a more effective or efficient manner?
- Are there ways to assume additional functions or provide additional services without adding new resources or in an otherwise cost effective manner?
- Are the administrative and financial controls by which the unit is managed adequate?
- Have the objectives of the 1978 administrative reorganization been met? (When the question is applicable.)*

The delineation of these questions does not mean that MORE studies are restricted to these issues. Other major and subordinate issues may be addressed, and the identification of these issues is one of the important phases of the study.

Design of the MORE Food Service Study

Introduction

For the purposes of the evaluation of MCPS Food Services, the several broad MORE management questions have been translated into a number of more precise study issues directly relevant to School Food Services. Evaluating Food Services presents a particularly important challenge because the operation is highly visible and has a direct impact on the entire student population. The increasing recognition given to nutritional concerns has also served to focus attention on Food Services.

The potential study issues for an evaluation of the operation of MCPS Food Services cover a broad spectrum ranging from whether the peas are overcooked (student satisfaction) to the adequacy of the accounting procedures. Some of

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*The Division of Food Services was not significantly changed under the reorganization, except for its reporting relationship to the expanded Office of Supportive Services. Therefore, a reorganization evaluation is not included in this report.

these issues revolve more around the food itself--its appeal, its taste, its acceptability, and its nutritional quality. Other concerns are standard management issues--monitoring procedures, procurement procedures, accounting controls, quality control, and staffing. Another area that merits study is the participation in government programs and the regulations and compliance procedures which are attached to these programs.

In a study of this type, consideration also needs to be given to the rapidly advancing technology in the food service field. New preparation methods and increasing computerization have the capability of bringing about fundamental changes in how Food Services functions and manages its operations. Some innovations have already been introduced into MCPS. For instance, during the 1980-81 school year, 56 elementary schools have satellite kitchens rather than on-site kitchens. Satellite kitchens receive food prepared at a central kitchen. While this results in a substantial labor savings,[1] satellites have met opposition from some parents who claim the system results in uneven cooking of the food, unappetizing appearance, and limited flexibility of menu offerings.[2] To evaluate adequately the efficiency of existing or proposed innovations, both the positive and negative aspects need to be examined from the standpoint of the consumer as well as cost effectiveness.

The report will describe the Food Service system: how it operates centrally and at the building level, who bears responsibility for which functions, and what procedures are used to track food and funds within the system. In conjunction with this description, the report will identify parts of the system in need of improvement and recommend possible changes. The study will also seek to uncover explanatory factors which influence such things as high participation rates or profit margins which are encountered in some schools. By looking carefully at the factors responsible for desirable outcomes, the report will be able to make specific recommendations as to how these outcomes may be obtained countywide.

Data Collection Overview

Various data collection methodologies were employed in the study of the Food Services Program including document analysis, questionnaires/surveys, interviews, and audits. At the beginning of the project, a preliminary survey was conducted to help administrators and members of the project staff identify issues to be investigated. After issues were identified, a data collection plan was developed. See Appendix A for a detailed description of data collection procedures used in the study. Record reviews were used to retrieve information which had already been collected for other purposes. Interviews were conducted with Central Office Food Services administrators, cafeteria managers, satellite workers, and principals. A stratified random sample of 34 schools was selected for in-depth participation in the study. The sample was drawn in such a way as to be representative of both types of cafeterias (on-site and satellite), varying levels of participation in the School Lunch Program, various grade levels, and percentage of free and reduced price lunches served. An additional supplemental random sample of 47 schools was

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[1]Memorandum to the Board of Education from Superintendent, January 1978.

[2]Final Report of the MCCPTA School Lunch Committee, Adopted by the MCCPTA Delegate Assembly, April 25, 1978.

identified to receive selected questionnaires to increase the sample size. A set of questionnaires/surveys was developed and delivered to the sample schools for principals, teachers, cafeteria managers, cafeteria workers, and satellite workers. Surveys were also conducted of students in Grades 1, 4, 6, 8, and 11 in the 34 study schools and parents of students in Grades 3, 5, 7, and 10.

It is important to note that 100 percent of the students, more than 86 percent of cafeteria staff members, and 100 percent of the cafeteria managers and satellite workers who were sampled returned the questionnaires. Seventy-three percent of the teachers and 88 percent of the principals who were sampled returned their surveys. Sixty-one percent of the parents of elementary students and 21 percent of the parents of secondary students returned the survey.

A plate waste study also was conducted in the 34 study schools to learn what items and how much of their lunches, bought at school or brought from home, students were throwing away. Observations of cafeteria operations were conducted in these study schools.

Audits of a selected sample of school cafeterias' accounting and inventory systems were conducted. In addition, an audit of the Food Services Central Office Management Information System was conducted to provide a description of the system that is used by the division.

Underlying Considerations

There are two overall considerations of the study that should be noted. First, much of the activity of the Division of Food Services is affected by federal laws and regulations. An attempt has been made to address these restrictions throughout the report. Since many of the changes in the federal School Food Programs have occurred recently, the final outcome or full impact of these changes on the Montgomery County Food Service Program cannot yet be determined. For example, school lunch prices were increased twice in the course of this study: in February, 1981, and again in September 1981. Each price raise followed the federal government's reduction of cash reimbursement rates for student meals and commodity support, and the redefinition of income guidelines to determine student eligibility for free or reduced price meals. More recently, the federal government has given serious consideration to significant reductions or elimination of support to the School Lunch Program. Where possible, the study has been modified to address these new issues.

Second, at the time this study was initiated and the first data collected, MCPS and the Division of Food Services were organized in five administrative areas. As of July, 1981, MCPS was consolidated into three administrative areas. Since many of the findings reported should not be affected by the consolidated organization, it was decided to report most findings based on the five-area organization of the Divison of Food Services as it existed at the time data was collected for the report. Data collected during the early stages of the study (1979-80) have been updated where significant changes were indicated. References are made and data presentations adjusted where early collection and the consolidation to three administrative areas might significantly impact the findings of the study.

CHAPTER 2

GENERAL DESCRIPTION OF THE DIVISION OF FOOD SERVICES

The Montgomery County Public Schools school lunch and breakfast program is directed and monitored by the Division of Food Services in the Department of School Services. Lunch is provided in all of the county schools. In the 1981-82 school year, breakfast was served in 68 percent of the schools. Also, all schools participate in the special milk program. Food service is also provided for the following

- 32 Head Start classes
- 22 day care centers
- Title VII senior citizens in four schools and in six senior citizens facilities
- A community operated senior citizen facility
- Retired Senior Volunteer Program participants in various schools
- The Summer Feeding Program at 38 sites
- Housing Opportunities Commission Sheltered Care at two sites
- Meals on Wheels.

The School Food Services Program in Montgomery County Public Schools provides meals through two types of delivery systems, on-site kitchens and a system of central and satellite kitchens. On-site kitchens prepare meals for only the students in that school and are staffed by a cafeteria manager and one or more cafeteria workers. The larger on-site cafeterias also may have their own baker, sandwich maker, and/or person responsible for main dish preparation. One hundred and twenty-three schools including the majority of elementary schools; all middle, junior, and senior high schools; and six special schools/centers are served by on-site kitchens.

Satellite kitchens serve food prepared at another location, i.e., a central kitchen. Individual "hot packs" are delivered frozen to the satellite schools and then heated. Individual "cold packs" for non-heated food items also are delivered and served. Each satellite kitchen is staffed by one satellite worker who is responsible for heating the food, serving the children, and cleaning the kitchen after lunch periods are over. The satellite worker also collects the money in schools where it has not previously been collected by classroom teachers. Five central kitchens prepare the food served in the satellite schools. Central kitchens are located in Fallsmead, Pleasant View, Sherwood, and Takoma Park Elementary Schools, and Martin Luther King Junior High School. The pre-portioned frozen meals are delivered by vans from central kitchens to the satellite schools. Fifty-six elementary schools and three special schools have satellite kitchens. (See Appendix B--Central Kitchens/Satellites.)

Twelve satellite kitchens were originally introduced in MCPS in 1966 when a number of elementary schools were built without kitchen facilities. The number of satellite kitchens gradually increased to 60 in 1977, then dropped to 56 in 1981. Factors that were originally used in determining conversion to satellite operation were financial stability and the level of participation in a school, both real and potential.[1]

Montgomery County Public Schools participates in federal child nutrition programs including the National School Lunch Program, the Special Milk Program, and the Direct Distribution Commodities Program. Free and reduced price meals and free milk are provided to students who meet the federal income criteria established for the programs. (These programs will be explained in Chapter 7). Since the county receives federal money to support these programs, it must adhere to all relevant regulations. For example, menus must meet federal nutrition requirements and schools must maintain the anonymity of children who receive free and reduced price meals. MCPS also receives federal assistance in the form of commodities or food items provided free by USDA to the school system. MCPS receives a proportional share of commodities available for the state of Maryland.

For the period July 1, 1980 to June 30, 1981, MCPS cafeterias' food sales to children totaled $4,788,689, total revenue from state sources was $300,460, and total revenue from federal sources was $3,267,046.

Responsibilities of Food Services

Central Office Personnel

The central administrative staff of the Division of Food Services is comprised of the director, assistant director and seven supervisors. Three field supervisors are responsible for centrally administering and overseeing the on-site school cafeterias assigned to them. They are responsible for monitoring the management of the technical and financial aspects of food programs at the school level. While they operate out of the Central Office, they supervise activities at individual schools, such as staffing, compliance with standards, and financial performance of the school cafeterias. The product and systems supervisor is primarily responsible for supervising the five central kitchens that prepare and/or supply meals to designated satellite kitchens. She is also responsible for managing satellite kitchens and reporting progress to principals. The nutritionist in the Central Office is primarily responsible for supporting nutrition education activities in the schools and acting as an information source for the schools when school personnel seek nutrition education materials or curriculum suggestions. She is also responsible for coordinating all training activities for Food Services staff. The commodities supervisor is responsible for supervising the

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[1]Memorandum to Members of the Board of Education from Charles M. Bernardo, Superintendent of Schools, "Progress Report of School Food Service Program" (January 12, 1978).

warehouse operation and coordinating food purchases with government commodity allocations. The performance standards specialist is primarily responsible for assessing, improving, correcting and monitoring Food Services operations to meet nutritional, sanitation and financial objectives of the program and to comply with federal and state regulations.

School-Based Management Personnel

Food Services school-based management personnel include cafeteria managers and satellite workers. Building principals also have specific responsibilities related to the Food Services Program.

A. Cafeteria Managers and Satellite Workers

Cafeteria managers are responsible for the day-to-day management of the individual on-site cafeterias including implementing the goals and directives of the Food Services Programs. Likewise satellite workers are responsible for the day-to-day management of the individual satellite cafeterias; however, some aspects of their duties are different from those of managers of on-site cafeterias because of the nature of the satellite program. More specific responsibilities of the cafeteria managers and satellite workers are discussed in Chapters 3 and 4.

B. Building Principals

Building principals are the only individuals discussed who have management responsibilities related to the Food Services program but who are not on the Division of Food Service staff. The extent of principals' involvement in the cafeteria management and operations varies from school to school. However, in general, principals are responsible for the cafeteria personnel in their individual schools, including managing personnel policies such as granting leave and handling disciplinary problems. They also coordinate with Food Services for making decisions regarding the operation of the Food Services Program in their individual schools, especially those aspects of the operation that affect students, i.e. providing meals to the students. Principals generally determine schedules for recess periods before or after lunch. They may decide whether alternative lunches are to be offered. They are responsible for making sure all children receive applications for the free and reduced price meals, making sure children eligible for free and reduced price meals are receiving the meals, and maintaining current records of all eligible children. A more detailed discussion of the various responsibilities of principals in relation to the Food Services Program is provided in Chapter 3.

MCPS Departments Outside Food Services

Many Food Services support functions are coordinated with other MCPS departments/divisions outside the Division of Food Services. Most of these functions are performed when requests are initiated by Food Services staff. The Department of Personnel Services actually hires staff; the Division of Data Processing Operations directs the generation of accounting or other

computerized reports utilized by Food Services management; the Division of Accounting is primarily responsible for correct billing of outside groups served such as senior citizens, and processing bills for cafeteria food and supplies; the Division of Payroll processes and handles pay checks for staff; and the Division of Supply Management picks up commodities and makes deliveries to schools.

PART II

MANAGEMENT OF FOOD SERVICES

CHAPTER 3 SUMMARY

ORGANIZATION, SUPERVISION, AND MANAGEMENT

The Division of Food Services is appropriately located as one of four divisions within the Department of School Services under the associate superintendent for supportive services. The division is organized with a strong central administrative staff to perform countywide functions such as menu planning, purchasing, staffing, and budgeting. The five central kitchens are organized on a functional basis, reporting to a supervisor in the central office. Individual cafeteria managers, satellite workers, and building principals are responsible for supervision of the day-to-day cafeteria operations. Except for the relationship among the satellite worker, field supervisor, and product and system supervisor, lines of communication/responsibility are clearly defined. The MCPS Food Services organizational structure is very similar to that found in five surrounding suburban school systems. Overall, the study found that the Division of Food Services has been very effective in planning for both anticipated and unanticipated changes in the program. Over the years, Food Service staff have conducted a number of formal and informal studies of their operation; and in most cases where the MORE Food Services Study addresses similar topics, the results have paralleled those of previous studies.

The Division of Food Services prepares a yearly operating budget in accordance with standard MCPS budget guidelines. The assistant director determines annual staffing allocations for schools based on school enrollment projections, types of programs being offered, number of meals being served, and the facilities available. All cafeteria managers are required to take a complete inventory of food and supplies on a monthly basis. Some managers, although not required, maintain a perpetual inventory sheet, i.e., a daily recording of all food and supply items used. Although the appropriate data elements are currently being collected in a timely manner for most major financial program management functions, the study identified three areas in which additional data/information is necessary for Food Services to generate further program efficiencies and/or improve program services. The are (1) quantities of food items individual schools are purchasing, (2) menu planning data, and (3) small equipment inventory data.

The reports produced from the information collected are used by Food Services for management/accounting purposes. They provide information to field supervisors for monitoring sales of lunches, determining financial status of cafeterias, and generally evaluating managerial performance. Food Services accounting reports are used to assess the labor situation in cafeterias and determine staffing needs. One major computerized report produced that provides useful management information is the Participation and Receipts Listing.

The Food Services accounting reports provide the basic information necessary for the major functions of program management. Although financial and personnel reports are usually available during the second week following the end of the month, Food Services accounting reports are often much later and the delay causes management problems.

A profit and loss statement is prepared monthly so that schools can review their own operations, and Food Services can review the overall operation. The lack of three types of data detract from the usefulness of the profit and loss statements in comparing the operation of similar schools. They are labor rates, reimbursements for free and reduced meals, and reimbursement for commodities.

At present, satellite schools are charged only for direct expenses incurred at each school location while food, associated labor, and overhead are charged to the school containing the central kitchen. Revenue is properly shown on the profit and loss statement for each school in the system. This results in unrealistic profits for the satellite schools and losses for the schools containing central kitchens.

The study observed a number of operational factors which significantly affect the profitability of cafeterias and over which food services staff have an inadequate amount of control. Two primary examples of these factors are the selection and evaluation of cafeteria managers and the scheduling of lunch periods.

The overall conclusion is that for day-to-day management and planning the Food Service staff does an excellent job and are to be commended. Multiyear planning of staff, facilities, and delivery systems will however, become increasingly important in the years ahead as decreasing enrollment, higher food costs, and school closings will put additional pressures on participation rates and profit/loss statements. The study found that although planning was being performed, advanced management planning techniques, such as operations research and linear programming, have not been used to optimize such things as the number and location of satellite schools being served by each central kitchen.

Recommendations

- Food Services staff should have greater involvement and influence on decisions made by school principals that affect the efficiency of the Food Services Program. One of the three levels of potential Food Services Staff involvement - authority, consultation, and information - should be employed in all school decisions concerning cafeteria operations.

- Cafeteria facilities and operations standards should be jointly developed and implemented by representatives of the Office of the Deputy Superintendent and Food Services staff.

- The current responsibilities of the quality control assistants should be clearly defined, documented, and disseminated to all satellite workers.

- The Profit and Loss Statement should be modified so that it better reflects the financial status of individual cafeterias and can be used as a comparative management tool. The modification should:

    1. Include the value of commodities used by individual schools as if they represented food purchased.

2. Charge individual schools the average labor rate for each position class rather than the actual hourly rate of the employee filling the position

3. Consider income for all lunches served as a paid lunch equivalent

   It should be noted that this recommendation, in part, is being implemented though the new School Lunch Inventory Control System.

o Increase the division's capability for multiyear planning and utilization of advanced management planning techniques.

CHAPTER 3

ORGANIZATION, SUPERVISION, AND MANAGEMENT

Introduction

The objectives of this chapter are to (1) describe how Food Services is organized and to identify the strengths and weaknesses of the current organizational structures, (2) describe the centralized/decentralized responsibilities of the various MCPS units associated with the direct delivery of food service, (3) review the supervisory roles and functions of the various Food Services positions, (4) review and analyze the management information currently available, and (5) identify how and by whom various management planning decisions are made. The organization of the Food Services Program in five surrounding suburban school districts were reviewed and compared to MCPS. Management planning has long been recognized as an important aspect of providing cost effective food services. The critical nature of the planning process, however, has recently been heightened by increasing food and labor costs, decreasing enrollments, advancing technologies, and lurking potential reductions in federal supports.

Organization of the Food Service Program

MCPS Organization

As shown in the MCPS Organization Chart in Exhibit 3.1, the Division of Food Services is currently one of four divisions within the Department of School Services. The Department of School Services in turn is one of four departments within the Office of Supportive Services.

Comparison of Organizational Structure With Other Systems

Although the office, department, and division organizations vary slightly among the five surrounding suburban school systems reviewed,[1] they all are generally similar to the MCPS organizational structure. In particular (1) in each district an associate/assistant superintendent for general/business services has overall responsibility and control of the Food Services Program along with other support functions such as transportation, maintenance, warehousing, and procurement, (2) all school systems reviewed have a central office unit, headed by a director, specifically responsible for the Food Services Program, and (3) all central Food Services units were staffed with a cadre of assistants, supervisors, and directors similiar to the composition of the MCPS Division of Food Services.

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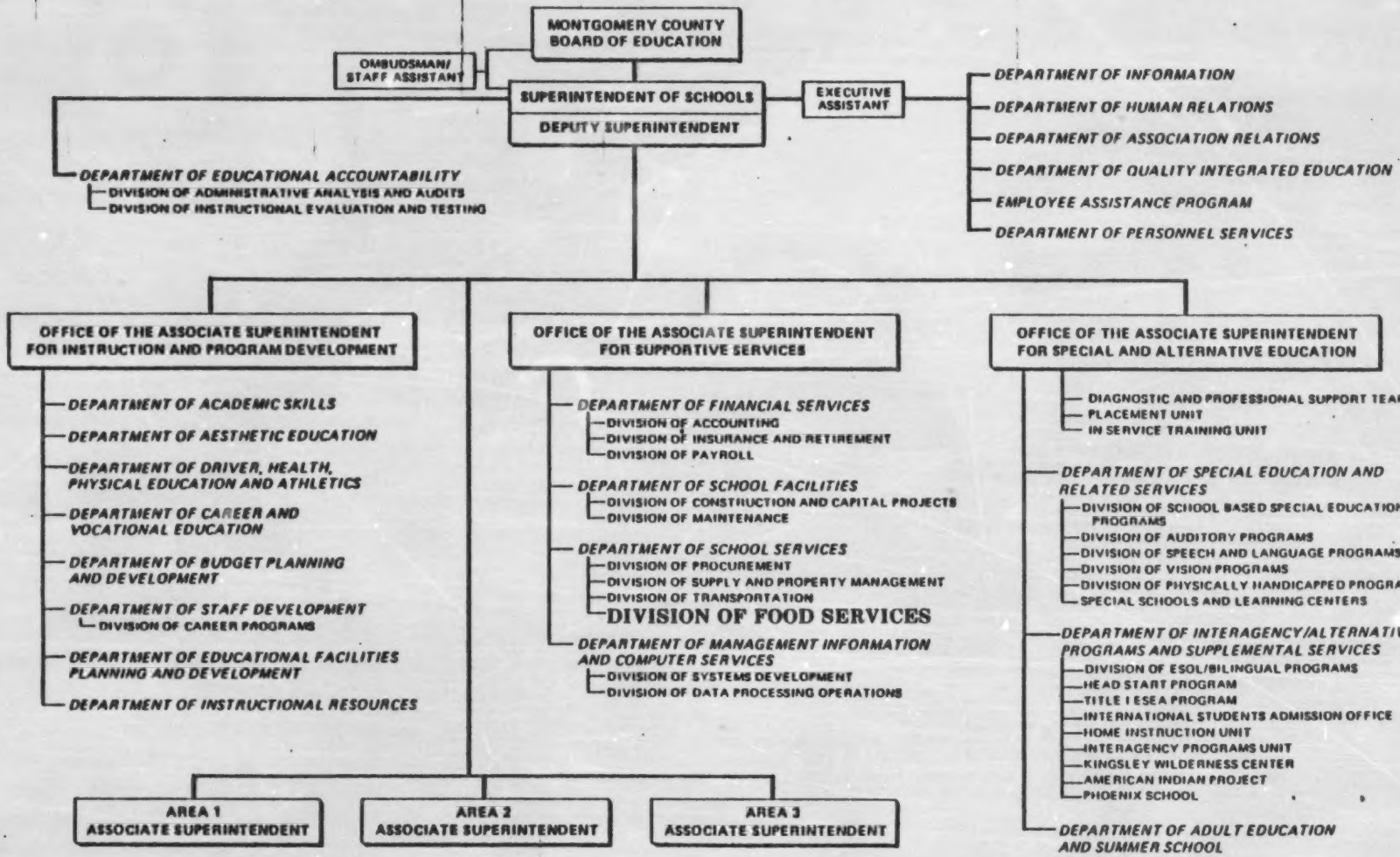
[1]The five school districts were Arlington, Baltimore County, Fairfax, Prince George's ,and Alexandria City.

Exhibit 3.1

FY 1981

MONTGOMERY COUNTY PUBLIC SCHOOLS
ORGANIZATION CHART


MONTGOMERY COUNTY BOARD OF EDUCATION
OMBUDSMAN/ STAFF ASSISTANT
SUPERINTENDENT OF SCHOOLS
DEPUTY SUPERINTENDENT
EXECUTIVE ASSISTANT
DEPARTMENT OF INFORMATION
DEPARTMENT OF HUMAN RELATIONS
DEPARTMENT OF ASSOCIATION RELATIONS
DEPARTMENT OF QUALITY INTEGRATED EDUCATION
EMPLOYEE ASSISTANCE PROGRAM
DEPARTMENT OF PERSONNEL SERVICES
DEPARTMENT OF EDUCATIONAL ACCOUNTABILITY
DIVISION OF ADMINISTRATIVE ANALYSIS AND AUDITS
DIVISION OF INSTRUCTIONAL EVALUATION AND TESTING
OFFICE OF THE ASSOCIATE SUPERINTENDENT FOR INSTRUCTION AND PROGRAM DEVELOPMENT
DEPARTMENT OF ACADEMIC SKILLS
DEPARTMENT OF AESTHETIC EDUCATION
DEPARTMENT OF DRIVER, HEALTH, PHYSICAL EDUCATION AND ATHLETICS
DEPARTMENT OF CAREER AND VOCATIONAL EDUCATION
DEPARTMENT OF BUDGET PLANNING AND DEVELOPMENT
DEPARTMENT OF STAFF DEVELOPMENT
DIVISION OF CAREER PROGRAMS
DEPARTMENT OF EDUCATIONAL FACILITIES PLANNING AND DEVELOPMENT
DEPARTMENT OF INSTRUCTIONAL RESOURCES
OFFICE OF THE ASSOCIATE SUPERINTENDENT FOR SUPPORTIVE SERVICES
DEPARTMENT OF FINANCIAL SERVICES
DIVISION OF ACCOUNTING
DIVISION OF INSURANCE AND RETIREMENT
DIVISION OF PAYROLL
DEPARTMENT OF SCHOOL FACILITIES
DIVISION OF CONSTRUCTION AND CAPITAL PROJECTS
DIVISION OF MAINTENANCE
DEPARTMENT OF SCHOOL SERVICES
DIVISION OF PROCUREMENT
DIVISION OF SUPPLY AND PROPERTY MANAGEMENT
DIVISION OF TRANSPORTATION
DIVISION OF FOOD SERVICES
DEPARTMENT OF MANAGEMENT INFORMATION AND COMPUTER SERVICES
DIVISION OF SYSTEMS DEVELOPMENT
DIVISION OF DATA PROCESSING OPERATIONS
OFFICE OF THE ASSOCIATE SUPERINTENDENT FOR SPECIAL AND ALTERNATIVE EDUCATION
DIAGNOSTIC AND PROFESSIONAL SUPPORT TEAM
PLACEMENT UNIT
IN SERVICE TRAINING UNIT
DEPARTMENT OF SPECIAL EDUCATION AND RELATED SERVICES
DIVISION OF SCHOOL BASED SPECIAL EDUCATION PROGRAMS
DIVISION OF AUDITORY PROGRAMS
DIVISION OF SPEECH AND LANGUAGE PROGRAMS
DIVISION OF VISION PROGRAMS
DIVISION OF PHYSICALLY HANDICAPPED PROGRAMS
SPECIAL SCHOOLS AND LEARNING CENTERS
DEPARTMENT OF INTERAGENCY/ALTERNATIVE PROGRAMS AND SUPPLEMENTAL SERVICES
DIVISION OF ESOL/BILINGUAL PROGRAMS
HEAD START PROGRAM
TITLE I ESEA PROGRAM
INTERNATIONAL STUDENTS ADMISSION OFFICE
HOME INSTRUCTION UNIT
INTERAGENCY PROGRAMS UNIT
KINGSLEY WILDERNESS CENTER
AMERICAN INDIAN PROJECT
PHOENIX SCHOOL
DEPARTMENT OF ADULT EDUCATION AND SUMMER SCHOOL
AREA 1 ASSOCIATE SUPERINTENDENT
AREA 2 ASSOCIATE SUPERINTENDENT
AREA 3 ASSOCIATE SUPERINTENDENT

3.2

The Division of Food Services Organization

In FY 1982 the Division of Food Services was composed of a total of 705 people filling 525.0 FTE (full-time equivalent) positions. There were 9 supervisory positions, 117 cafeteria manager positions, 13 warehouse and distribution positions, 338.5 cafeteria worker positions, 10.5 delivery workers, 32 satellite workers, 3 food quality control assistants, and 5 clerical positions. Although the actual number of people filling these FTE positions may vary from time to time and from fiscal year to fiscal year, the total number of authorized FTE positions has changed little over the five year period of FY 1978 to FY 1982. Detailed analysis of Food Services staffing is provided in Chapter 4.

The structure of the Division of Food Services for FY 1982 is shown in Exhibit 3.2. The overall direction and management of the division is provided by a director and assistant director supported by three field supervisory positions. The division is organized with a combination of functional and line authorities. Functionally, the five central kitchen cafeteria managers report to the product and systems supervisor. On-site cafeteria managers at all levels, elementary through senior high school, report to a field supervisor. The commodities supervisor, who oversees the warehouse operation, and the performance standards supervisor, who monitors food services operations, both report to the assistant director. A nutritionist reporting to the assistant director rounds out the central administrative team.

Supervisory Responsibilities

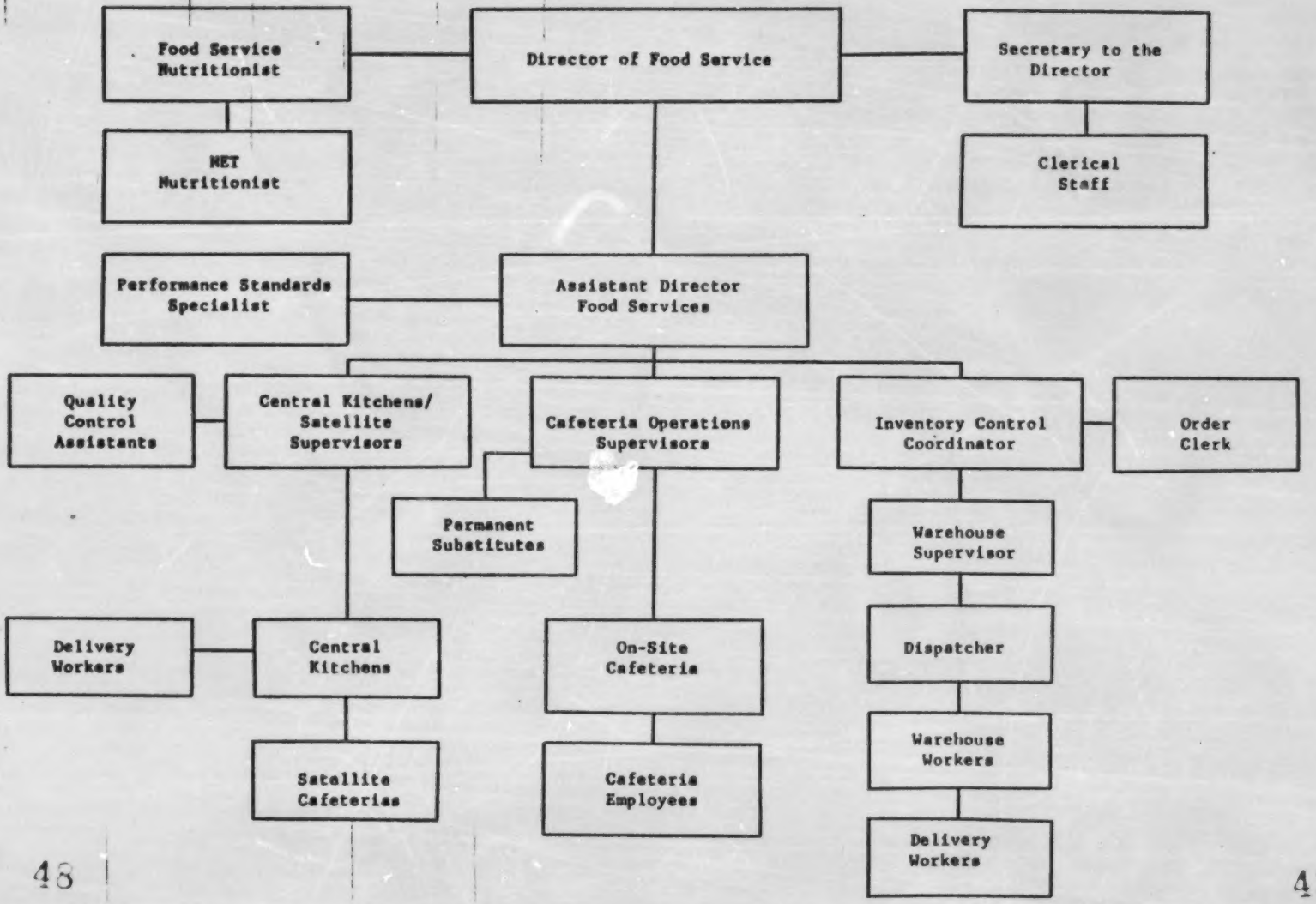
Director and Assistant Director

The central office of the Division of Food Services is headed by a director and assistant director and is composed of the seven supervisors identified above. They have the primary responsibility for division planning, budgeting, staffing, and monitoring compliance with the Maryland State Department of Education Food and Nutritional Service. In addition, they coordinate other support functions; make decisions regarding facilities, food and equipment specifications; and monitor vendor performance. Central Office activities are coordinated with other Food Services supervisors including the field supervisors, the product and systems supervisor, the nutritionist, commodities supervisor, and the food standards supervisor.

Supervisory Role of Field Supervisors

Field supervisors are responsible for ensuring that all aspects of the on-site cafeterias assigned to them are operated effectively and that they comply with all relevant state and local health and sanitation codes. Such responsibilities include organizing staff at individual schools, monitoring the fiscal status of schools, and participating in the personnel procedures of cafeteria staff. The field supervisors coordinate with and report to the director and assistant director. The division's organizational structure allows for interaction and communication between the cafeteria managers and satellite workers in the school and the field supervisor. However, each field supervisor has responsibility for a large number of schools. Field supervisors

Exhibit 3.2
MCPS FOOD SERVICE DIVISION ORGANIZATION
FY 1982



also establish meal price structures, review individual school cafeteria data reports, meet with students and parents, report progress of cafeteria operations (financial and participation) to principals, assign equipment from closed schools and determine equipment needs. Individual supervisors have expertise in a variety of program areas including cost and financial analyses, survey development and menu planning.

Supervisory Role of Product and Systems Supervisor

The product and systems supervisor is primarily responsible for coordinating the operations of the five central kitchens and the 13 or 14 satellite kitchens served by each central kitchen. Such responsibilities include supervising the cafeteria managers in the central kitchens and the satellite delivery workers, conducting financial reviews of central kitchens, planning elementary and day care menus, and planning for special events. When satellite workers have questions or require a substitute, they contact the product and systems supervisor. The product and systems supervisor is assisted in the field (satellite kitchens) by three quality control assistants who are responsible for monitoring the quality of meals served by the satellite schools.

Supervisory Role of Nutritionist

The nutritionist serves as a resource/contact person for school-based personnel who wish to develop and/or supplement a nutrition education project or curriculum component. She does not have direct supervisory responsibility. She is also responsible for parental contact concerning nutritional concerns, development of in-service training programs for Food Services staff, and other requests for nutritional information.

Supervisory Role of Commodities Supervisor

The commodities supervisor is responsible for the warehouse operation including related data processing activities. This person coordinates with and reports to the Food Services assistant director and director.

The commodities supervisor establishes policies and control procedures for the warehouse manager and staff who in turn are responsible for the daily distribution and receipt of food and other supplies. This supervisor is also responsible for maintaining appropriate stock levels, food purchases, receipt of USDA commodities and required follow up communications, providing input into menu planning as it affects purchases and stock levels, and maintaining quality control procedures for food and supplies. The commodities supervisor is also responsible for establishing and maintaining appropriate statistical information regarding warehouse operations such as usage reports, documentation of physical inventory, inventory turnover rates, and dollar volume of receipts.

The Supervisory Role of the Performance Standards Specialist

The performance standards specialist is responsible for monitoring and assessing Food Services operation and assuring that program objectives are in compliance with federal and state regulations. He conducts the Performance Standards of Food Service Programs as required by the Maryland State Department of Education. The specialist analyzes financial records of cafeterias and designs data collection tools to carry out USDA requirements, interprets policies and procedures for the free and reduced price meals programs, tests new products, assists in developing product specifications, evaluates product acceptability and performance, develops standardized recipe files and evaluates menus for compliance with nutritional requirements and in terms of achieving financial objectives. The specialist also cooperates with the director and assistant director in establishing, interpreting and implementing policies and procedures for county-wide food services operations and compiling reports and official testimony regarding food services operations.

Supervisory Role of Cafeteria Managers

Cafeteria managers at Levels I, II, III, or IV have responsibility for the day to day management of on-site cafeterias and supervision of cafeteria workers. Five of these managers are central kitchen managers.

In smaller elementary school cafeterias, the cafeteria manager along with one cafeteria worker is responsible for preparing food and serving all student meals and any other special programs that may be in the school, for example, Head Start, Day Care or Senior Citizens; completing management information accounting reports, maintaining inventory control; ordering food and supplies; and performing other managerial duties. Responsibilities of cafeteria managers in larger elementary schools, middle/junior high schools, and senior high schools are similar, although they generally also are responsible for managing a staff of two or more cafeteria workers.

Supervisory Role of Area Offices

Under the current organization and distribution of responsibilities, area offices have a minimal management role in the Food Services Program and rarely become involved with the supervision of Food Services staff. Area offices may be contacted for administrative support such as assistance in establishing a breakfast program in a school, but they have no day-to-day involvement in cafeteria operations.

Supervisory Roles of Building Principals

Responsibilities of the individual building principals vary from school to school. Primarily they are responsible for the cafeteria personnel in their building, including handling disciplinary actions of staff and students or granting leave to staff. They establish lunch periods in cooperation with Food Services staff or other building administrators and monitor the free and reduced price meal application/eligibility process.

Strengths and Weaknesses of Current Organizational Structure

General Observations

In general, cafeteria managers, cafeteria workers, and satellite workers feel that Food Services is well-managed and properly organized at both the school level and central administrative level. Results from the cafeteria manager and satellite worker surveys indicated that they generally felt that the Division of Food Services was well-organized, cooperative, efficient, and friendly. Other strong points mentioned were that the central adminstration held meetings to keep managers and workers informed, offered opportunities to continue to improve food services operations, and provide good training and an atmosphere of togetherness and supportiveness. Principals who stated that they had contact with Food Services beyond their school's cafeteria manager recognized the strong points of the policy of testing new recipes and products, supporting the dietary guidelines, and promoting the helpfulness of field supervisors.

Centralization vs. Decentralization

The Food Services Program is operated with strong centralized management for the major functions of purchasing, menu planning , budgeting and accounting, and allocating resources. At the division level, a management team concept is utilized. Individual on-site and central kitchens have decentralized responsibilities to operate cafeterias on a day-to-day basis. There is general agreement among both the Food Services central administration and school cafeteria staff that this division of centralized vs. decentralized functions works well and is an efficient mechanism for operating the Food Services Program. Top management of Food Services indicated that they felt that the division could be run more effectively, however, with a field organization which would allow a smaller span of control for field supervisors. A widely held feeling is that the centralizaion of food supplies procurement generates annual savings and that the central warehouse will provide additional cost reductions.

Clarity of Lines of Responsibility/Communications

Responsibilities of administrative personnel at the central office level are clearly defined. The responsibilities of central administration are understood by the cafeteria managers and satellite workers. Cafeteria managers in on-site kitchen schools understand the circumstances under which they can/should contact the field supervisor. There is, however, a significant lack of understanding among satellite workers regarding the responsibilities of the field supervisor and the product and systems supervisor. Some satellite workers do not know what the field supervisor's responsibilities are, particularly as they relate to their individual school cafeteria operations. In addition, some satellite workers do not always understand the role of quality control assistants. It appears that the lack of understanding is, in part, the result of there being only infrequent contact between the field supervisor or quality control assistant and the satellite workers. However, 77 percent of the satellite workers said that they felt the quality control assistant has helped them do a better job and that most felt the assistants understood the problems they have in their

schools. Eighty-six percent of cafeteria managers and 82 percent of satellite workers felt the field supervisors do understand the problems in their schools.

The line of communications between the school and the Food Services central administration was generally considered by principals to be effective. Individual schools varied as to whether principals, cafeteria managers, or both worked directly with the field supervisor; but in most cases the arrangement achieved the desired results.

Frequency of contact with the field supervisor varied among principals. One principal stated that the field supervisor does not call him; another principal stated he intentionally saw the supervisor as little as possible. In another school, the supervisor stopped by regularly to let the principal know what was happening in the county (in terms of Food Services).

Principals reported contact occurred with the field supervisor under the following circumstances: regular visits once each month; other occasional visits to the school, particularly when it is time to conduct the evaluation conference of the cafeteria manager; discussions of personnel evaluations; visits to discuss the past year's Profit and Loss Statement; efforts to solve problems and answer questions; visits to share information about various topics such as what is happening elsewhere in the county Food Services Program; distribution of new products for experimentation in the schools; and visits to inform principals when the cafeteria is losing too much money.

Another principal said the supervisor was "big on rhetoric and small on action." Other responses included the following: the field supervisor did not take initiative to provide suggestions or feedback, though the communication system would be satisfactory if it actually operated as it was designed; when there were problems the supervisor helped out; "we don't bother each other"; "I have nothing to discuss with her"; they will talk if the principal has a question; "middle level management does not seem useful to get things done, so ... go to the director if they don't get things done..."

Management Planning and Decision Making

The central administrative staff of the Division of Food Services (director, assistant director and supervisors) are primarily responsible for planning and making decisions. Although final decisions on various aspects of the Food Services Program may be made at higher levels within MCPS or even by the Board of Education, recommendations and the accompanying supporting analyses are prepared by this central administrative staff. The major requirement for effective management planning and decision making is information. Data that is routinely collected and used for day-to-day decision making is used for long-range planning as well. (Food Services data collection procedures are discussed later in this chapter.) Although most divisionwide planning is performed by the central administrative staff, input and reactions are obtained from school cafeteria managers through the field supervisors. Overall, the study found that the Division of Food Services has been very effective in planning for both anticipated and unanticipated changes in the program. Staff have kept current on advanced technologies and other means of increasing the efficiency of delivering food services. The director and

assistant director maintain close contact with the Federal School Lunch Program and are quick to interpret the impact on MCPS of any potential changes in the program. Although not always involved in school closing decisions, the Division of Food Services has plannned well for anticipated school closings and has made maximum utilization of kitchen equipment when it has come available as a result of school closings. Over the years Food Services staff have conducted a number of formal and informal studies of their operations. In most cases where the MORE Food Services Study addressed similiar topics, the results of this study paralleled those of previous studies.

Budgeting

The Division of Food Services prepares a yearly operating budget in accordance with standard MCPS budget guidelines. As the operating budget contains maximum yearly expenditures for food, supplies, equipment, and personnel positions, it is the primary planning and decision-making document for the Food Services Program. Direct Food Service expenditures appear in two separate sections of the operating budget. Nonschool-based administrative expenditures are in Category 10* and are supported from local funding sources. School-based cafeteria staff are included in Category 61 of the operating budget and funded from revenue produced from either the sale of meals or received from the federal or state government. The Food Services director and assistant director develop the annual budget based on past cost and staffing data and anticipated program changes. The division budget is reviewed by the director of the Department of School Services and then in turn as part of that budget by the Associate Superintendent for Supportive Services, the Superintendent of Schools, the Board of Education, and ultimately by the County Council. Food Service staff make modifications to the budget, as necessary, at each level of the review process. See Chapter 5 for an analysis of the Food Services budget.

Staffing Allocation

The assistant director, with the assistance of the appropriate field supervisor, annually determines the staffing allocations for each school cafeteria. These decisions are based on school enrollment projections, types of programs being offered, number of meals being served, and the facilities available. Preliminary decisions are then reviewed with the principal. See Chapter 4 for the staffing guidelines utilized in this process.

Procurement

Procurement decisions are made according to an approved bid list. Vendors are selected through a competitive bidding system. Food Services determines when it is necessary to order new equipment for the kitchens. Individual managers decide type and quantity of food and supply items to order for their individual cafeterias. Supervisors review orders submitted by the individual managers/satellite workers. See Chapter 6 for a detailed description of the procurement process.

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*As of FY 1983, Category 10 becomes Category 11.

Menu Planning

Menu planning is performed by specifically designated supervisors. Menus are developed monthly. Such decisions are largely affected by federal regulations and constraints. Menus are influenced by student/parent committees or taste-testing panel recommendations.

Delivery System

Food Services central administrators prepare recommendations concerning the delivery systems for specific schools based upon program requirements, costs, and benefits. The Board of Education ultimately makes delivery system decisions based upon Food Service recommendations and input from PTA's and possibly other community organizations.

Personnel and Staff Development

Personnel matters are handled by the principals, particularly staff selection decisions. Food Services central administrative staff may also get involved. The Department of Personnel Services actually hires cafeteria staff based on the recommendations of the principal. Personnel Services staff, principals, and Food Services staff may be involved with handling disciplinary actions. Permanent substitutes are selected by Food Services central staff and hired by the Department of Personnel Services. For the most part, in-service training programs are developed by the Division of Food Services, but staff also participate in training programs offered by the Division of Staff Development. The State Department of Education, Food and Nutrition Branch may also establish training programs.

Program Management Data Collection

Food Services Central Office routinely collects a variety of information from the cafeterias on a weekly, biweekly, monthly, or as needed basis. Information provided by cafeteria managers includes

- The daily input sheet of sales
- Bank deposits summary as verification of deposits made
- The inventory of food and supply items
- Inventory summary sheet
- Commodity perpetual inventory sheet
- A la carte production sheet (secondary schools only)
- Food orders
- Commodity orders
- Information regarding surplus commodities

- Equipment needs of schools
- Condition of equipment
- Food surveys (with menu planning information)
- Backup sheets for Day Care and Senior Citizen Programs (maintained in schools with these special programs).

See Appendix C for a description of the data collection forms used by Food Services.

All cafeteria managers are required to take a complete inventory of food and supplies on a monthly basis. Some managers, although not required, maintain a perpetual inventory sheet, i.e., a daily recording of all food and supply items used. See Chapter 6 for a detailed description of current inventory procedures and recommendations.

Occasionally, other information (such as food components sold on the salad bar and performance surveys of the cafeteria) is gathered. Equipment needs of schools are identified by cafeteria managers or field supervisors, who complete forms upon inspection or review of the kitchen equipment condition. Food surveys are periodically disseminated among a sample of students to determine which foods are preferred by students. This information can be used by Central Office personnel for planning menus. Input is also obtained from parents, teachers, and students. Much of the information that is occasionally gathered is compiled and either computerized or used to produce handwritten reports.

Although the appropriate data elements are currently being collected in a timely manner for major financial and program management functions, the study observed three areas in which additional data/information is necessary for Food Services to generate further program efficiences and/or improve program services. First, it is currently difficult for Food Services to determine accurately quantities of food items individual schools are purchasing. Being able to compare these data to meals served and menus would assist field supervisors to determine if individual schools are properly buying and preparing meals and contribute to fiscal control. The process by which schools purchase/order food items will be significantly modified by the opening of the new Food Service Warehouse. It is anticipated that the operating procedures and data processing application currently under development for the new warehouse will address this need.

Data necessary for improved menu planning is the second requirement for additional data needs. Information either not currently being collected or unuseable for this function relates to the specific contents of meals, costs

of meals, and the number of various meal components served. It was originally anticipated that the computer software being obtained/developed for the new Food Service Warehouse would contain this capability, but as of the writing of this report this is not the case. See recommendations in Chapter 6.

The third data collection need observed during the study would provide information for a small equipment inventory system. There is currently no system for monitoring the inventory and use of small kitchen/cafeteria equipment items such as ice cream scoops and pots and pans. See recommendations in Chapter 6.

Program Management Reporting

General Observations

The reports produced from the information that is provided on the various forms are utilized for management/accounting purposes by the Food Services Program. They provide information to field supervisors for monitoring the sales of lunches, keeping up with the financial status of cafeterias, and generally evaluating managerial performance. Food Services accounting reports are used to assess the labor situation in cafeterias and determine staffing needs. For example, is a school serving a sufficient number of meals in terms of the productive capacity of their staff or is additional staff necessary to produce the required number of meals? The daily input sheets that produce the computerized Participation and Receipts Listing and Profit and Loss Statements also make it possible for field supervisors to analyze the financial aspects of the cafeterias' operations. For example, are food costs of one school much higher than another school? Also, the cost information provided makes it possible for field supervisors to analyze the cost of lunch and determine whether prices should be changed to the cover costs of producing the meals.

Three major computerized reports which provide useful management information are (1) the Participation and Receipts Listing, (2) the Profit/Loss Statement, and (3) the Income and Expense Recapitulation. These reports provide the percentage of the income that was expended by cafeterias for food, labor, and supplies. The reports are produced from the information on the daily input sheet of sales and used by Food Services staff to monitor specific food cost goals. For example, for school year 1980-81, the goal was that food costs of individual cafeterias should not exceed 42 percent of revenues taken in by the cafeteria. Field supervisors may use the food cost percentage, as indicated on the Income and Expense Recapitulation Report, as a clue to check individual cafeterias' performance and suggest improvements in management procedures where they may be necessary.

The Food Service accounting reports provide the basic information neccesary for the major functions of Food Services Program management. Whereas Food Services receives the standard system-wide financial and personnel reports during the second week following the end of the month, the Food Services accounting reports usually come later, and the delay often causes problems. The reader is directed to additional discussions concerning data collection and reporting in Chapter 6.

Profit and Loss Statement

A Profit and Loss Statement is prepared monthly so that schools can review their own operations, and Food Services can review the overall operation. One of the most important management tools to evaluate performance is being able to compare like schools. However, under the present system meaningful comparisons are difficult. The major factors affecting comparability are labor rates, reimbursements for free and reduced meals, and commodities.

Labor rates vary drastically from one school to another creating unfair variances that are beyond the control of an individual school. For example, in a cafeteria with low turnover, the manager and/or workers may have two or three longevity increments; whereas a similar school may have a new staff with one or all of the personnel on steps A to C of the salary scale. As a result the cafeteria with the more senior staff shows a higher labor rate, which has an adverse effect on the cafeteria's Profit and Loss Statement.

Free and reduced price programs present a similar problem because reimbursement received for a free or reduced price meal is greater than the cash collected plus the reimbursement for a regular lunch program. Therefore a school with heavy free and reduced participation would have more income than a school with the same participation on a regular lunch program. From an operational standpoint, preparing a free lunch is no different from preparing a paid lunch; thus, a disproportionate profit margin is realized when comparing the two.

When commodities are used to prepare a meal, no expense is reflected on the Income and Expense Recapitulation report. However, commodities do have value even though no price is assigned to them. When a school does not or cannot utilize commodities due to unavailability, inadequate storage facilities, etc., the equivalent food must be purchased. When comparing schools using few commodities with those using many commodities, the expense picture is again distorted.

In addition to the previous findings affecting comparability of on-site kitchens, a special problem exists with satellite schools. At present, satellite schools are charged only with direct expenses incurred at each school location, while food, associated labor, and overhead are charged to the school containing the central kitchen. Revenue is properly shown on the Profit and Loss Statement for each school in the system. This results in unrealistic profits for the satellite schools and losses for the schools containing central kitchens.

Program Management Not Totally Under the Control of Food Services

As is the case with other MCPS operating divisions, there are aspects of the Food Services program management which are not under the direct control of Food Services managers. Many of the areas affecting the Division of Food Services are typical of other MCPS organization, while others are unique and have a direct and significant impact on the delivery of food services. As an example of the former, decisions conerning job classifications, salaries, and benefits are made by the Department of Personnel Services and the Board of

Education as part of the negotiated agreement. The Division of Food Services is faced with a number of situations, however, which have significant implications for the profitability of their operations and over which they do not have adequate influence, authority, or control. Although Food Services is directly responsible for the profitability of each school, principals have primary responsibility for the selection, evaluation, and promotion of cafeteria managers and staff. School cafeteria operation schedules are another example of where Food Services does not have total control over factors which have significant impact on their performance. The top managment of Food Services believes scheduling factors such as the time of day of lunch periods, the number of lunch periods, the number of students per lunch period, the scheduling of recess before or after the lunch period, delayed school openings/early closings, half school days for workshops, final exam days, and open campus arrangements have a significant impact on Food Services ability to serve meals, participation rates, plate waste and ultimately the school cafeterias' Profit and Loss Statement.

There are three levels of potential Food Service involvement in school-by-school decisions which affect cafeteria operations: authority, consultation, or information. The authority level suggests that Food Services, after consultation with the principal, be authorized and responsible for scheduling and other cafeteria operation decisions. The consultation level implies that the authority and responsibility for such decisions are the principals but that Food Services staff must be consulted prior to the decision and have the opportunity to discuss the impact of alternate decisions with the principal. The information level implies little or no Food Services knowledge or input prior to the decision but requires that Food Services staff be informed after the fact. The amount of influence that Food Services staff have in these school-by-school decisions depends largely on the individual school principal. However, the study found too many instances where either Food Services input was not obtained or was not thoroughly considered.

Another approach to this concern is to establish cafeteria facilities and operation standards which would be used by principals and Food Services staff when making scheduling and operations decisions. Such standards would define cafeteria capacity standards, staffing guidelines, and policy guidelines for scheduling cafeteria operations.

Conclusions

The organizational structure and delegation of supervisory responsibilities appear to be appropriately defined, in line with other school Food Services Programs, and effectively implemented. The Division of Food Services seems to have established the proper balance between centralized and decentralized functions. The economics of centralized menu planning, purchasing and staffing (and beginning in FY 1982 central warehousing) have been obtained while allowing decentralized management of the actual delivery of food services.

The day-to-day working relationships at the school level seem to vary greatly depending on the personality, interest, and management style of the principal, cafeteria manager, and field supervisor. Observations in selected schools and

the survey results indicate that in virtually all situations the management arrangements employed—although varied—work well and meet most of the needs of the Food Services Program. However, some principals make decisions without sufficient consideration of the impact on cafeteria operations.

Although the overall lines of responsibility and position functions are well defined, there are two areas of the elementary satellite school operation that deserve attention. First, the reporting relationship between the satellite worker, the field supervisor and the product and systems supervisor are not always well defined. The findings indicated that the satellite worker "may" contact the field supervisor or "may" contact the product and systems supervisor for assistance in resolution of problems or assistance in improving the operations of the satellite kitchen. Second, the function of the quality control assistants appears to vary significantly across administrative areas and among individual satellite kitchens. The response from satellite workers to their availability, function and usefulness was mixed. Some indicated their help was useful while others did not understand their function. Both of these concerns will become increasingly important if MCPS moves to expand the satellite cafeteria concept.

Overall, the study found that the Division of Food Services has been very effective in planning for both anticipated and unanticipated changes in the program. Although the majority of management planning is focused on the current or forthcoming fiscal year, multiyear planning for the expansion of the satellite program has been very successful. Most planning is done on a centralized basis by the central administrative staff with input and feedback coming from cafeteria managers via the field supervisors. The overall conclusion is that for this type of management planning the Food Services staff does an excellent job and are to be commended. Multiyear planning of staff, facilities, and delivery systems will, however, become increasingly important in the years ahead as decreasing enrollment, higher food costs, and school closings put additional pressures on participation rates and profit/loss statements. Optimization and fine tuning of cafeteria operations and the purchasing/storage/distribution system can greatly affect the efficiency of operations and significantly impact the cost per meal served. The study found that although planning was being performed, advanced management planning techniques, such as operations research and linear programming, have not been used to optimize such things as the number and location of satellite schools being served by each central kitchen.

Recommendations

The findings reported in this chapter lead to the following recommendations:

- Food Services staff should have greater involvement in and influence on decisions made by school principals that affect the efficiency of the Food Services Program. One of the three levels of potential Food Services staff involvment--authority, consultation, and information —should be employed in all school decisions concerning cafeteria operations.

- Cafeteria facilities and operations standards should be jointly developed and implemented by representatives of the Office of the Deputy Superintendent and Food Services staff.

- The current responsibilities of the quality control assistants should be clearly defined, documented, and disseminated to all satellite workers.

- The Profit and Loss Statement should be modified so that it better reflects the financial status of individual cafeterias and can be used as a comparative management tool. The modification should:

  1. Include the value of commodities used by individual schools as if they represented food purchased

  2. Charge individual schools the average labor rate for each position class rather than the actual hourly rate of the employee filling the position

  3. Consider income for all lunches served as a paid lunch equivalent.

  It should be noted that this recommendation, in part, is now being implemented through the new School Lunch Inventory Control System.

- Increase the division's capability for multiyear planning and utilization of advanced management planning techniques.

CHAPTER 4 SUMMARY

STAFFING

The overall finding of the study related to major personnel and staffing issues is that there are no overriding problem areas and that practices appear to be consistent with those of surrounding school districts. Except for an increase in FY 1982 for the new Food Service Warehouse, there has been a slight decrease in the total number of Food Service positions from FY 1978 to FY 1982. Although enrollment declined by 13,782 students over the same four-year period, the number of meals served increased by 632,852. As the increased number of meals served were provided by fewer positions, the data indicates that a 10 percent increase in productivity was achieved between FY 1978 and FY 1982.

The Food Service staff is predominantly female and white. The average age of the 768 Food Service workers in FY 1980 was 46 years old. Food Service employees have a fairly long length of service in each position classification. Middle managers at both the school and central administration level are experienced in their respective positions and are long-term school system employees. Seventeen percent of the 750 people employed in the Division of Food Service terminated their employment with MCPS during FY 1980. The overall turnover rate for Food Services employees is significantly higher than for maintenance and personnel employees but lower than in the highly technical fields of data processing, planning, and construction.

The Food Services assistant director determines staffing allocations for each school cafeteria by using a set of informal unwritten guidelines which are based on the type of cafeteria and the level of the school. The minimum staffing allocation for on-site elementary school cafeterias has been established at one 7-hour per day cafeteria manager and one 4-hour per day Cafeteria Worker I. The standard used for on-site elementary cafeterias is 14 meals served per person-hour of staffing. The range currently being experienced by on-site elementary cafeterias is 12-18 meals per person-hour.

The minimum staffing allocation for secondary schools is one 7-hour per day cafeteria manager and one 6-hour Cafeteria Worker II. Because of a la carte offerings, the criteria for staff allocations beyond the minimum at the secondary level is dollar volume of business rather than the number of meals served. The standard is $12-$16 of revenue per person-hour of staffing. Performance standards are informal and unwritten.

Overall, MCPS seems competitive with the pay scales of surrounding school districts. MCPS cafeteria workers generally earn more than their counterparts and cafeteria managers generally earn less than most of their counterparts. In general, Food Services employees are highly satisfied with their jobs and enjoy the work environment. Although many cafeteria managers and cafeteria workers expressed a feeling of being understaffed, data for surrounding districts does not seem to support that perception. The number of meals served per Food Services staff member for MCPS is in the midrange of the data for five other school districts. The process by which staff are allocated to schools (and the criteria used in these decisions) will become more important as increased movement of staff and cafeteria operations are contemplated in the years ahead.

Recommendations

- o The Department of Personnel should continuously receive applications for Food Service positions and maintain a cadre of applications on file.

- o Continue to gauge overall staffing levels to the number of meals served rather than student enrollment. Formalize and disseminate staffing and performance standards and more closely monitor cafeteria operations by these standards.

- o Consider ways to decrease the number of cafeteria managers supervised by each field supervisor. Current operations should be monitored closely to determine loss of cafeteria efficiency which can be attributed to the reduction from five field supervisors to three.

- o Expand cafeteria staff in-service training in the areas of food preparation, nutrition, and federal regulations.

CHAPTER 4

STAFFING

Introduction

This chapter deals with the personnel issues which are related to the delivery of the Food Services Program. Topics covered are the work force, staffing guidelines, staff ratios, pay scales, and the desirability of Food Services positions. The Division of Food Services, unlike most departments/divisions, utilizes a large number of less than full-time staff. Consequently, the data for these topics are for all persons filling positions rather than the actual number of budgeted positions. For example, sex and race distributions for delivery service workers are for the people filling the full-time equivalent positions. The data were collected in the early stage of the study and is for FY 1980. Summary data for the current fiscal year has been reviewed to ensure that deviations from the FY 1980 detailed data have not occurred which would significantly modify the findings.

The Work Force

Number of Positions

Exhibit 4.1 shows the number of Food Services positions in the Operating Budget between FY 1978 and FY 1982. It can be seen that, except for the increase in FY 1982 (most of which is for the new Food Services Warehouse), there has been virtually no change in the total number of Food Services positions. Adjustments to various positions have been made, however, to take into account program changes such as the conversion of on-site cafeterias to satellite kitchens and volume changes in cafeterias which alter cafeteria manager grade classifications.

Exhibit 4.2 compares Food Services staffing to meals served and enrollment from FY 1978 to FY 1981. Although enrollment declined by 13,782 students over the four-year period, the number of meals served increased by 632,852. As the increased number of meals served were provided by 10 fewer positions, the data indicates that a 10 percent increase in productivity was achieved between FY 1978 and FY 1981.

Composition of Staff

Exhibit 4.3 shows that the Food Services staff is predominantly female (94 percent) and white (79 percent). More than 99 percent of Cafeteria Workers I are female, and 100 percent of both Cafeteria Workers II an III are female. All 128 of the cafeteria managers and all 57 of the satellite cafeteria workers are female. In fact, only one Food Services worker above an entry level position (Cafeteria Worker II or service delivery worker) is male.

Although 21 percent of Food Services employees are minority, the vast majority of these are black (20 percent), leaving the other minorities underrepresented (as compared to county minority population) in the Food Services work force. Twenty-four of the 128 cafeteria managers (19 percent) are black and 103 (80 percent) are white.

Exhibit 4.1

STAFFING OF DIVISION OF FOOD SERVICES
FY 1978 - FY 1982

Position	FY 78	FY 79	FY 80	FY 81	FY 82
H-I Director	1.0	1.0	1.0	1.0	1.0
F-G Assistant Director	2.0	2.0	1.0	1.0	1.0
20 Field Food Service Supervisor	5.0	5.0	5.0	5.0	3.0
20 Product and System Supervisor	1.0	1.0	1.0	1.0	1.0
20 Food Service Nutritionist	-	1.0	1.0	1.0	1.0
20 School Lunch Training Assistant	1.0				
12 Secretary III	1.0				
11 Secretary II	1.0	1.0	1.0	1.0	1.0
8 Clerk Typist II	2.0	2.0	2.0	2.0	2.0
7 Clerk Typist I	1.0	1.0	1.0	-	-
13 Cafeteria Manager IV	28.0	29.0	29.0	32.0	32.0
12 Cafeteria Manager III	26.0	30.0	30.0	25.0	25.0
9 Cafeteria Manager II	57.0	55.0	55.0	53.0	53.0
8 Cafeteria Manager I	14.0	14.0	14.0	7.0	7.0
6 Cafeteria Worker III	9.0	7.0	7.0	5.0	6.0
6 Food Quality Control Assistant	-	3.0	3.0	3.0	3.0
5 Food Services Delivery Worker	9.0	9.0	11.0	10.0	10.5
4 Food Services Satellite Worker	-	27.1	27.1	32.0	32.0
4 Cafeteria Worker II	60.0	60.0	60.0	60.0	60.5
2 Cafeteria Worker I	291.0	265.9	262.9	272.0	272.0
20 Food Services Commodities Asst.	-	-	-	-	1
17 Supv. Supply Service Workers	-	-	-	-	1
20 Food Services Standards Asst.	-	-	-	-	1
11 Supply Service Worker III	-	-	-	-	1
10 Supply Service Worker II	-	-	-	-	4
9 Account Clerk I	-	-	-		12
8 Supply Worker I	-	-	-	-	4
TOTAL POSITIONS	509.0	514.0	512.0	512.0	525.0

Exhibit 4.2

COMPARISON OF MEALS SERVED TO FOOD SERVICE
POSITIONS AND ENROLLMENT
FY 1978 - FY 1981

Fiscal Year	Total Meals Served*	Budgeted Positions (FTEs)	Student Enrollment	Meals Served per FTE Position
1978	7,660,656	510.0	112,625	15,020
1979	8,010,552	499.0	107,430	16,053
1980	8,109,716	499.0	102,519	16,251
1981	8,293,508	500.0	98,843	16,587

*Breakfasts are weighed as one-half a lunch in the total meals served because they required less labor to prepare and serve. Figures do not include a la carte or adult meals.

Exhibit 4.3

FOOD SERVICE PERSONNEL BY RACE AND SEX FOR
FY 1980*

Position	Number Employed	Sex %		Race %				
		Female	Male	White	Black	Asian	Hisp.	Indian
Cafeteria Worker I	471	99	1	81	15	2	2	0.4
Cafeteria Worker II	83	100	0	59	39	1	1	0
Cafeteria Worker III	6	100	0	83	17	0	0	0
Cafeteria Manager I	7	100	0	57	29	14	0	0
Cafeteria Manager II	58	100	0	74	26	0	0	0
Cafeteria Manager III	25	100	0	92	8	0	0	0
Cafeteria Manager IV	38	100	0	87	13	0	0	0
Food Services Satellite Worker	57	100	0	86	7	2	5	0
Food Quality Control Assistant	4	100	0	100	0	0	0	0
Field Food Services Supervisor	5	80	20	80	20	0	0	0
Food Services Nutritionist	2	100	0	100	0	0	0	0
Product and System Supervisor	1	100	0	100	0	0	0	0
Food Services Delivery Worker	14	57	43	79	21	0	0	0
Total	771							

*Race and sex data by position was updated for FY 1982 and showed no significant differences from that being reported for FY 1980.

Exhibit 4.4 provides data on the age distribution of Food Services employees by position. The average age of the 768 Food Services workers in FY 1980 was 46.2. This average age is fairly consistent among all position categories with the exception of Food Services delivery workers (average age 29) and the positions of nutritionist and product and systems supervisor. Entry level Food Services positions do not seem to attract young people; the average age of Cafeteria Workers I was 46, with 87 percent over 35 and the average age of satellite workers was 42, with 70 percent over 35.

Exhibit 4.4

FOOD SERVICE PERSONNEL DISTRIBUTION BY AGE
FY 1980

Position	Number Employed	Percentage in Each Group					
		Under 26	26-35	36-45	46-55	56 & Older	Average (Year)
Cafeteria Worker I	470	6	7	30	35	22	46
Cafeteria Worker II	81	0	1	27	38	33	50
Cafeteria Worker III	6	0	33	17	33	17	43
Cafeteria Man. I	7	0	43	14	14	29	43
Cafeteria Man. II	58	0	7	28	33	33	49
Cafeteria Man. III	27	0	4	15	30	52	52
Cafeteria Man. IV	38	0	11	32	42	16	47
Food Services Satellite Worker	55	5	25	31	24	15	42
Food Quality Control Assistant	4	0	25	25	50	0	40
Field Food Services Supervisor	5	0	20	20	40	20	47
Food Services Nutritionist	2	0	100	0	0	0	31
Product and Systems Supervisor	1	100	0	0	0	0	24
Food Services Delivery Worker	14	50	29	7	14	0	29
Total	768	Average Age: 46.2 years					

Exhibit 4.5 indicates Food Services employees have a fairly long length of service in each position classification. As one might expect, the entry level positions of Cafeteria Worker I and satellite worker have the fewest years of service averaging 6.3 and 4.7 years, respectively. The exhibit also shows that the average years of service for cafeteria managers as a whole is over 12 years. The average length of service for the five field supervisors is 10.4 years. Middle managers at both the school and central administration level are experienced in their respective positions and are long-term school system employees. Cafeteria workers also have long lengths of service within the same school. Cafeteria managers average 8.2 years, cafeteria workers 6.3 years, and satellite workers 3.1 years.

A sampling of the educational level of Food Services employees revealed that 34 percent of cafeteria workers and 44 percent of cafeteria managers are high school graduates. While all of the field supervisors were college graduates, only 3 percent of cafeteria managers graduated from college.

Exhibit 4.5

FOOD SERVICE PERSONNEL DISTRIBUTION BY LENGTH OF SERVICE
FY 1980

Position	Number Employed	Length of Service (%) 0-1	2-5	6-9	10-13	14-17	18+	Average (Years)
Cafeteria Worker I	470	28	26	14	21	8	4	6.3
Cafeteria Worker II	81	5	11	16	28	21	19	12.3
Cafeteria Worker III	6	0	17	50	17	0	17	9.6
Cafeteria Manager I	7	0	43	14	0	14	29	9.4
Cafeteria Manager II	58	2	19	7	33	17	22	12.2
Cafeteria Manager III	27	0	8	8	41	11	33	14.6
Cafeteria Manager IV	38	0	8	16	29	26	21	12.8
Food Services Satellite Worker	55	20	51	22	5	0	2	4.7
Food Quality Control Worker	4	50	25	25	0	0	0	3.5
Field Food Services Supervisor	5	0	20	40	20	0	20	10.4
Food Services Nutritionist	2	50	0	50	0	0	0	3.5
Product and Systems Supervisor	1	0	100	0	0	0	0	2
Food Services Delivery Worker	14	71	22	7	0	0	0	1.6
Total	768	Average Length of Service: 7.8 yrs.						

Stability of Work Force

Exhibit 4.6 indicates that 125 of the 750 people employed (17 percent) in the Division of Food Services terminated their employment with MCPS during FY 1980. The turnover rate for all cafeteria workers was 17 percent as compared to 11 percent for all cafeteria managers. There was no turnover among field supervisors and only a small turnover rate for satellite workers (4 percent). Exhibit 4.7 shows that the turnover rate for both cafeteria workers and managers has risen steadily over the four-year period of FY 1976 to FY 1980. However, much of the turnover during this period can be attributed to abnormally high staff retirement levels, which has since declined. The overall turnover rate for Food Services employees is significantly higher than maintenance and personnel employees but lower than the highly technical fields of data processing, planning and construction.

Exhibit 4.6

FOOD SERVICE PERSONNEL ANNUAL TURNOVER
FY 1980

Position	Number	Number Terminated	Percentage of Employees in Position
Cafeteria Worker I	465	89	19
Cafeteria Worker II	78	4	5
Cafeteria Worker III	5	0	0
Cafeteria Manager I	10	2	20
Cafeteria Manager II	57	6	11
Cafeteria Manager III	29	2	7
Cafeteria Manager IV	30	5	17
Food Services Satellite Worker	53	2	4
Food Quality Control Assistant*	4	3	75
Field Food Services Supervisor	5	0	0
Food Services Nutritionist	1	0	0
Product and Systems Supervisor	1	1	100
Food Services Delivery Worker	13	11	85
Totals	750	125	

*New positions in FY 1980, no turnover since FY 1980.

Exhibit 4.7

COMPARATIVE TURNOVER RATES FY 1976 - FY 1980

Position	Percentage of Position				
	FY 1976	FY 1977	FY 1978	FY 1978	FY 1980
Cafeteria Workers	8.9	8.7	11.5	13.7	16.7
Cafeteria Managers	6.1	3.5	5.7	10.3	10.9
Maintenance	5.2	5.8	6.8	5.2	N/A
Personnel	20.0	0.0	10.0	4.8	N/A
Computers, Management, and Information	9.5	9.5	13.1	19.0	N/A
Planning, Construction, and Technical	3.7	11.1	12.5	16.0	N/A

Staffing Guidelines

The Food Services assistant director, with the assistance of the appropriate field supervisor, determines the staffing allocation for each individual school cafeteria. These decisions are based upon a set of informal unwritten guidelines which vary with the type of cafeteria and the level of the school. It should be noted that what follows are guidelines only and that individual school variations are allowed to take into account personnel policies, differences in facilities, and other unusual situations.

The minimum staffing allocation for on-site elementary school cafeterias has been established at one 7-hour per day cafeteria manager and one 4-hour per day Cafeteria Worker I. Cafeteria Worker IIs are not normally assigned to elementary schools. The criteria for increasing elementary school staffing beyond the minimum is volume of operations as measured by the number of meals served. The type of programs the school participates in, e.g., the breakfast program, senior citizens, head start, affect the number of meals served. The standard used for on-site elementary cafeterias is 14 meals served per person-hour of staffing. For staffing purposes, a breakfast served is counted as one-half a meal because of the relative ease of preparation and serving. The range currently being experienced by on-site elementary cafeterias is 12-18 meals per person-hour. Additional staffing can be supplied by either increasing the number of hours worked by the Cafeteria Worker I already employed or by adding another part-time cafeteria worker I. This decision is usually dictated by the types of programs the school participates in, e.g., breakfast. The number of meals served per person-hour of staffing (if low) might be used as an indicator of poor management or one criterion to be considered in conversion to a satellite kitchen.

The minimum staffing allocation for elementary schools with satellite kitchens is one 3-hour per day satellite worker, with the average size school having one 4-hour per day satellite worker. If the count of meals received and served is high, the satellite worker allocation can be expanded to 6 hours per day. In several large schools, a 3-hour helper is added.

The minimum staffing allocation for secondary schools is one 7-hour per day cafeteria manager and one 6-hour Cafeteria Worker II. Because of a la carte offerings, the criteria for staff allocations beyond the minimum at the secondary level is dollar volume of business rather than the number of meals served. The standard is $12-$16 of revenue per person-hour of staffing. Options for how to provide additional staff allocations depend on the number of serving lines, the number of lunch periods, and the types of programs offered.

Pay Scale of Staff

Average annual salaries of Food Services employees by position class are provided in Exhibit 4.8 and show the tremendous range of job classifications and salaries paid to Food Services employees. For example, the average salary for a part-time Cafeteria Worker I (Grade 2) was $4,163 in FY 1980 as compared

to the average salary of a full-time field supervisor (Grade 20) of $23,381. Average salaries increase gradually through the three levels of cafeteria workers and four levels of cafeteria managers. The higher average salaries for supervisors reflect the greater management responsibilities of these positions.

Exhibit 4.9 compares the average hourly pay of MCPS cafeteria workers and cafeteria managers to their counterparts in five surrounding public school districts. Four of the five districts pay cafeteria workers slightly less per hour. Baltimore County pays more. The average hourly wage paid a MCPS cafeteria manager appears to be in the midrange, with three districts paying higher hourly wages and two less than MCPS. Overall, MCPS seems to compare well with the pay scales of surrounding school districts.

Desirability of Food Services Positions

Job Satisfaction of Food Services Personnel

In general, Food Services employees are highly satisfied with their jobs and enjoy the work environment. All central administration supervisors indicated during interviews that they were very satisfied with their jobs. Cafeteria managers and satellite workers expressed satisfaction with their jobs, especially in terms of specific aspects such as seeing the lunch counts and bank accounts increase, having contact with children, hearing children say how much they like the food, feeding hungry children, making money, cooking, and setting up and serving the lunches.

Exhibit 4.8

FOOD SERVICE PERSONNEL
AVERAGE SALARY BY POSITION CLASS
FY 1980

Position	Grade	Number of Employees	Average Hrs. Worker Per Day	Average Salary Per Year
Cafeteria Worker I	2	470	5.0 Cafe-	$ 4,163
Cafeteria Worker II	4	81	teria Workers	6,422
Cafeteria Worker III	6	6	as a Group	7,326
Cafeteria Manager I	8	7	6.9 Cafe-	7,503
Cafeteria Manager II	9	58	teria Managers	9,240
Cafeteria Manager III	12	27	as a Group	11,211
Cafeteria Manager IV	13	38		11,586
Food Services Delivery Worker	5	14	N/A	4,664
Food Services Satellite Worker	4	55	4.9	4,378
Food Quality Control Assistant	6	4	8	5,757
Field Food Services Supervisor	20	5	8	23,381
Food Services Nutritionist	20	2	8	19,638
Product and System Supervisor	20	1	8	17,644
Total	768			

Exhibit 4.9

PAY SCALE COMPARISONS WITH OTHER SCHOOL DISTRICTS
FY 1980

School District	Position	
	Cafeteria Workers	Cafeteria Managers
Alexandria	$3.60/hr	$5.44/hr
Arlington County	4.05/hr	5.38/hr
Baltimore County	4.22/hr	5.59/hr
Fairfax County	3.70/hr	4.99/hr
Montgomery County	4.10/hr	5.22/hr
Prince George's County	3.63/hr	4.50/hr

Cafeteria workers are generally satisfied with their jobs. Although they consider their work demanding, surveys indicated that 99 percent of cafeteria managers, 92 percent of cafeteria workers, and 79 percent of the satellite workers are either satisfied or very satisfied with their jobs. Ninety-three percent of cafeteria managers, 91 percent of cafeteria workers, and 80 percent of satellite workers are working in the type of cafeteria in which they would like to work.

Exhibit 4.10 shows that most managers (97 percent) and satellite workers (90 percent) are very satisfied with the supervision they receive from their field supervisors. Most cafeteria workers (94 percent) are satisfied with their managers. One hundred precent of managers and satellite workers and 88 percent of cafeteria workers enjoy working with the students in their schools very much. Almost 100 percent of managers, satellite workers, and cafeteria workers are very happy with their working hours. Most cafeteria personnel (94 percent of managers, 79 percent of cafeteria workers, and 87 percent of satellite workers) felt MCPS provides enough opportunities for education and training. Most also agreed that there are opportunities for advancement within the School Lunch Program.

The least satisfying aspects of the job for cafeteria managers/satellite workers include taking the inventory; enduring day-to-day frustrations such as angry teachers or rude children; being too busy and having to rush; lacking adequate time to spend on each aspect of the job; understaffing--especially on high participation days; going to the bank; seeing food wasted; not being treated equally by the principal; having difficulty getting substitutes; having uneven workloads; hearing criticisms from teachers; having difficulty with the lunch count being either too high or too low; and "collecting the lunch money because some of the children are ill-mannered."

Difficulty of Filling Food Services Positions

According to the Food Services director and assistant director and the personnel figures they quoted, it is very difficult to fill cafeteria worker positions. While enough applicants exist to fill positions, the directors characterize them as a generally "immobile" group that do not want to travel to work far beyond their home base in the county. Food Services top management feel that the Department of Personnel Services would be more successful in recruiting Food Services staff if they continually received applications and maintained a cadre of applications on file. Personnel Services tends to wait for people to come to them, yet they do not have an open door policy whereby people can turn in applications at any time.

Factors that Make Food Services Positions Undesirable

Factors that make Food Services positions undesirable include having insufficient hours to complete all required work; requiring a large amount of paperwork; being rushed; managers not being allowed to hire/fire workers; managers wanting, but not being in a position, to pick food the children want; dealing with vendors who arrive with late deliveries or deliver less than the quantity ordered; lacking sufficient help to manage the children in the cafeteria; receiving inaccurate lunch counts; lacking appropriate equipment; wanting more varied menus but not being in a position to change them; lacking

Exhibit 4.10

JOB SATISFACTION OF CAFETERIA PERSONNEL*

Statement	Cafeteria Managers	Cafeteria Workers	Satellite Workers
My field supervisor is a good supervisor.	97	-	90
My cafeteria manager is a good supervisor.	-	94	-
The work in the cafeteria is demanding.	98	97	94
There are opportunities for advancement within the School Lunch Program.	91	82	63
MCPS provides enough opportunities for education and training of cafeteria workers.	94	79	87
The work is too hard physically.	62	69	13
The working hours are good for me.	100	99	100
I enjoy working with the other cafeteria staff in this school.	97	99	-

*Percent who checked "agree very much" or "agree" with each statement.

enough staff help; having a large number of items on the menu requiring a lot of preparation time; and having food that does not meet the quality it should. Approximately half the cafeteria managers and workers felt they could do their job better if they knew more about food preparation and/or nutrition and the federal state regulations that apply to the School Lunch and Breakfast Programs. This was not true for most satellite workers.

Sixty-two percent of cafeteria managers and 69 percent of cafeteria workers felt the work is too hard physically for them. Sixty-eight percent of managers and 50 percent of workers felt teachers are too critical and/or demanding of the School Lunch Program. While they do not feel parents are excessively critical, most managers, workers, and satellite workers felt that students will complain "no matter what."

Implications of the Findings

The overall findings of the study as related to major personnel and staffing issues are that there is no overriding problem area and that practices appear to be consistent with those of surrounding school districts. There are findings for subordinate issues, however, which deserve attention. Food Services staff are extremely stereotyped and for the most part are drawn from a single segment of the population: white females, who are primarily interested in midday, part-time stable, employment close to home. These employees seem to be very satisfied with their jobs and are not particularly concerned with advancement from their relatively low job classifications. However, the fact that cafeteria workers and cafeteria managers are of the same age group would indicate a possible lack of future promotional opportunities for cafeteria workers. Staff stability is relatively high, while the mobility rate among schools is low. Consequently, placement of cafeteria managers will become a problem in FY 1983 and ensuing years as additional schools are closed because of declining enrollment. A future significant expansion of the satellite kitchen approach to the delivery of food services would further complicate this situation.

Although many cafeteria managers and cafeteria workers expressed a feeling of being understaffed, data for surrounding districts do not seem to support that perception. The number of meals served per Food Services staff member for MCPS is in the midrange of the data for five other school districts, with two above and two below MCPS.

Staffing guidelines and performance standards are unwritten and informal. The process by which staff are allocated to schools (and the criteria used in these decisions) will become more important as increased movement of staff and cafeteria operations is contemplated in the years ahead.

Staff development/training activities will also become increasingly important under these circumstances. Even now approximately half of the cafeteria managers and cafeteria workers felt they could do their jobs better if they knew more about food preparation and/or nutrition and the federal regulations that apply to the Food Services Program.

Recommendations

The following recommendations are set forth as a result of the findings:

- The Department of Personnel Services should continuously receive applications for Food Services positions, and maintain a cadre of applications on file.

- Continue to gauge overall staffing levels to the number of meals served rather than student enrollment. Formalize and disseminate staffing/performance standards and more closely monitor cafeteria operations by these standards.

- Consider ways to decrease the number of cafeteria managers supervised by each field supervisor. Current operations should be monitored closely to determine any loss of cafeteria efficiency which can be attributed to the reduction from five field supervisors to three.

- Expand cafeteria staff in-service training in the areas of food preparation, nutrition, and federal regulations.

CHAPTER 5 SUMMARY

BUDGETING, COSTS, AND ACCOUNTING

Funds to directly support the MCPS Food Services Program are found in three separate categories of the Operating Budget. Category 10 contains the costs associated with the central administration of the Food Services Program and is funded from local tax sources. Category 9 includes most of the fixed charges for the administrative positions budgeted in Category 10. Category 61 contains all other directly identifiable budgeted funds associated with the delivery of food services. This category is established as a self-supporting fund and is funded by income from the sale of meals plus reimbursements received from federal and state sources.

In FY 1982 the actual funds allocated in the Operating Budget to support the Food Services Program were $593,034. Montgomery County Public Schools also assists the Food Services Program by providing in-kind support services on a nonreimbursable basis. Food Services is not charged for (1) utilities necessary to operate kitchens, (2) four of the five account clerks assigned to maintain Food Services accounting, (3) data processing application development or operation, (4) maintenance of kitchen equipment, (5) gas/oil and maintenance of the Food Services delivery trucks, and (6) transportation charges to pick up and deliver some commodities and other supplies. Data obtained from other Maryland local educational agencies shows that only two of the other LEAs surveyed support the Food Services Program with Category 10 funds, and these were considerably less than MPCS. In addition, all other LEAs charge the Food Services Programs for at least two of the listed major services. The issue is one of policy rather than management: to what extent should MCPS local tax dollars support the Food Services Program?

The study found, roughly a year ago, that parents and students were in agreement that $.80 was the maximum they were willing to pay for a regular lunch. When compared to the other large counties in the Washington-Baltimore area, MCPS's lunch prices are currently among the lowest. As lunch price increases usually have a negative impact on participation rates, the study analyzed participation from October, 1980 to October, 1981. During this period the price of both the regular elementary and secondary lunches was raised $.20 with a resulting decrease in participation of 8 percent. Senior highs decreased only 5 percent, while junior highs lost 11 percent.

The total cost of Food Services direct labor in FY 1980 was $4,188,521, which was 40 percent of the total Food Services expenses. Another $1,192,337 (11 percent) was spent for fixed charges associated with direct labor. In the same year, $4,508,671 was expended for food (43 percent), $551,562 (5 percent) for supplies and materials, $50,839 (0.005 percent) for furniture and equipment, and $7,962 (0.001 percent) for travel and other expenses.

At present MCPS does not invest surplus available operating Food Services Funds. Food Services Funds are not maintained in a separate account but are comingled (although identifiable) with other MCPS monies in the General Fund. MCPS frequently uses Food Services Funds to pay non-Food Services expenses. As a result, MCPS makes less frequent and smaller requests for operating funds

from the county government. This allows the county government to maintain and invest MCPS operating funds for a longer period of time. A survey of five other large school systems in Maryland found that all five maintained a separate account for Food Services Funds, invested these funds, and earned $50,000-$170,000 per year in interest for the Food Services Program. U.S. Department of Agriculture regulations state that all food services program income must be used for program purposes. To ensure full compliance with these regulations, MCPS should consider establishing a separate Food Services account and investing any surplus for direct return to the Food Services Program.

The closing of schools and the resulting increased enrollment in surrounding schools can have an impact on the operation and cost of the school lunch program. Food Services has, however, had little involvement with school closing decisions or the development of the 15-year facilities plan.

The Division of Food Services provides meal service to a number of student and adult groups on a cost reimbursable basis. As MCPS does not have the ability to identify the cost of in-kind services provided to Food Services, costs for in-kind services being provided to these groups are not being recovered from outside agencies to which the Division of Food Services provides contract services.

Half of the 34 schools selected for participation in this study were visited for an audit of cafeteria financial records and procedures. In general all schools visited were found to be operating in an acceptable manner. However, two financial control problems, (control of cash and security of food inventories) were identified and warrant attention.

Recommendations

- The superintendent and the Board of Education should review the current policy of providing local tax support to the Food Services Program. Considerable reductions in the general fund operating budget could be obtained by a decision to reduce or eliminate this support.

- MCPS should create a separate central Food Services account into which all revenues (and surplus) should be deposited and out of which all Food Services expenses should be paid. Cafeteria receipts should be deposited daily in no more than five to eight individual accounts and removed by the Division of Accounting twice weekly. Procedures should be developed whereby daily balances of the Food Services account can be determined. The director of the Department of Financial Services should be given the authority and responsibility to invest daily surplus Food Services Funds in short-term (1-30 day) securities such as repurchase agreements. Under our interpretation of Department of Agriculture regulation the interest earned from these investments must be used for the Food Services Program.

- Investigate with the Maryland State Department of Education what, if any, procedural changes need to be made to ensure that MCPS receives the maximum Food Services cash reimbursements at the earliest possible date and that these funds are deposited in and invested from the central Food Services account.

- Alternatives by which Food Services Funds and other reimbursable funds can be removed from the Operating Budget should be explored.

- The Division of Food Services should be involved earlier in discussions concerning school closings. The impact of school closings on the ability of the Division of Food Services to provide cost effective quality meals should be considered. When school closing decisions are made, procedures for the sale of surplus kitchen equipment should be initiated early enough to complete the process prior to the closing of schools.

- Secondary schools should account for a la carte item receipts separately and generate control totals rather than the current practice of determining a la carte receipts by subtraction. Consideration should be given to the purchase of electronic cash registers for this purpose.

- All school food and supply storage areas should be locked with special keys and be under the control of the principal and/or cafeteria manager.

- If MCPS implements a cost accounting system, an administrative overhead fee to cover MCPS in-kind contributions to food services should be determined and added by the Division of Accounting to all invoices sent to outside agencies to which the Division of Food Services provides services.

CHAPTER 5

BUDGETING, COSTS, AND ACCOUNTING

Introduction

This chapter addresses the financial issues associated with the delivery of food services. One has only to know the size of the Food Services Operating Budget ($12,429,561 in FY 1981) to realize the importance of efficient budgeting, accounting, and cost control. The chapter begins with an analysis of the source of the funds and the various cost components of Food Services and ends with an analysis of in-school audits. Additional topics covered are investment of Food Services Funds, meal pricing structures, in-school accounting procedures, and the costs associated with serving additional groups.

Budgeting for Food Service Costs

Direct funds to support the MCPS Food Services Program are found in three separate categories of the Operating Budget as follows:

Category 10 contains the costs associated with the central administration of the Food Services Program and is funded from local tax sources. Included in Category 10 are the salary costs of the director and assistant director, other supervisors, and the central clerical staff. Also included are the costs of supplies and materials, equipment, and travel directly related to the central administrative staff. Category 10 also includes expenditures for grants and other funds which are not supported from local tax sources.

Category 9 includes the county support of fixed charges for the administrative positions budgeted in Category 10.

Category 61 contains all directly identifiable other budgeted funds associated with the delivery of food services. Salaries and fixed charges for all cafeteria staff and the funds for the purchase of food and supplies are included in Category 61. This category is established as a self-supporting fund and is funded by income from the sale of meals plus reimbursements received from federal and state sources.

Exhibit 5.1 shows funds budgeted for Food Services in Categories 61 and 10 for Fiscal Years 1970 to 1981. Although Category 61 more than doubled during that period of time, Category 10 has shown an even greater increase. The aspects of budgeting funds in Category 10 vs. Category 61 will be discussed in greater detail later in this chapter.

Exhibit 5.2 depicts the changes in budgeted funds, expressed as ratios of the FY 1970 budgeted amount corrected for inflation, for Food Services Categories 10 and 61 and compares them to the ratio for the total MCPS Operating Budget.

Exhibit 5.1

COMPARISON OF FOOD SERVICE BUDGET
FY 1970 - FY 1981

Fiscal Year	Category 61 Amount Budgeted	Category 10 Amount Budgeted	Total Budget
1981	$13,147,579	$576,495	$13,724,074
1980	10,346,567	546,346	10,892,913
1979	10,076,323	544,905	10,621,228
1978	9,009,404	698,849	9,708,253
1977	8,635,551	720,547	9,356,098
1976	8,537,526	673,646	9,211,172
1975	7,880,153	624,841	8,504,994
1974	7,221,605	512,968	7,734,573
1973	6,866,276	541,390	7,407,666
1972	6,409,772	424,736	6,834,508
1971	6,504,679	258,203	6,762,882
1970	5,981,809	167,153	6,148,962

Exhibit 5.2

FOOD SERVICE BUDGET EXPRESSED AS
RATIOS OF THE FY 1970 Budget*
FY 1970 - FY 1981

Fiscal Year	Total MCPS Operating Budget	Food Service Category 61	Food Service Category 10
1981	1.10	0.98	1.54
1980	1.13	0.87	1.64
1979	1.19	0.93	1.81
1978	1.23	0.92	2.54
1977	1.24	0.94	2.80
1976	1.25	0.98	2.77
1975	1.24	0.97	2.75
1974	1.23	0.99	2.53
1973	1.22	1.01	2.85
1972	1.13	0.97	2.31
1971	1.07	1.03	1.46
1970	1.00	1.00	1.00

*Corrected for inflation on the basis of the Consumer Price Index. The year 1970 is taken as the base year and is therefore 1.00.

The ratio for the total MCPS Operating Budget went through three distinct phases during the period from FY 1970 to FY 1981. First, the period from FY 1970 to FY 1973 saw the ratio increase from the standard 1.0 to 1.22, then remain relatively constant around 1.24 until FY 1978, and finally begin to decline to 1.10 in FY 1981.

The Food Services portion of Category 10, local tax support to Food Services, has experienced significant growth since FY 1970 and the ratio is now one and a half times what it was in 1970.

The ratio for Category 61 generally followed the same trends as the total MCPS ratio except that the increases were significantly less than experienced for MCPS as a whole. For example, Category 61 peaked at about the same time as the MCPS ratio (FY 1973) but at 1.01 as compared to the total MCPS ratio of 1.22. After FY 1973 the Category 61 ratio began a steady decline and was actually below 1.00 from FY 1974 to FY 1981.

It should be noted that not all costs associated with the Food Services Program are budgeted in Categories 9, 10, and 61. Indirect costs which are not reimbursed by Food Services are budgeted with the respective program providing the service. For example, utility costs associated with kitchens are in Category 7, Food Services accounting costs are in Category 1, etc.

Tax-Supported vs. Enterprise Funds

As was stated earlier in this chapter, the majority of Category 10 of the Operating Budget is supported from local tax funds and contains the direct salaries and other expenses associated with the central administration and supplemental funds for the Free and Reduced Price Lunch Program. Exhibit 5.1 showed that a significant increase occurred in Category 10 in FY 1972 when the Board of Education transferred supervisory positions from self-supporting Category 61 to tax-supported Category 10. Although budgeted funds for Category 10 increased from $424,736 in FY 1972 to $576,495 in FY 1981, Exhibit 5.2 showed that in equivalent FY 1970 dollars the ratio was approximately the same in FY 1981 as it was in FY 1972. This was caused by the reduction in the actual number of supervisory positions in the Division of Food Services.

Category 10 contains expenditures for grant programs which have corresponding revenue entries located elsewhere in the Operating Budget. Category 9 contains the county support of fringe benefits for the administrative positions located in Category 10. Consequently, funds budgeted in Category 10 do not give an accurate picture of the total local tax-supported funds allocated to the Food Services Program. In FY 1982 the actual funds allocated in the Operating Budget to support the Food Service Program were $593,034 and are detailed in Exhibit 5.3. Montgomery County Public Schools assists the Food Services Program by also providing in-kind support services on a nonreimbursable basis. For example, Food Services is not charged for (1) the portion of the individual school utilities necessary to operate the kitchen, (2) four of the five account clerks in the Division of Accounting assigned to maintain Food Services accounting, (3) data processing application development or operation, (4) maintenance of kitchen equipment, (5) gas/oil and maintenance of the Food Services delivery trucks, and (6) transportation charges to pick up and deliver some commodities and other supplies. Although

it is difficult to determine accurately the cost of the in-kind services MCPS provides to Food Services, estimates are provided in Exhibit 5.4. The reader should recognize that the $379,000 is a ball park estimate and that actual expenses of these services might be more or less than this amount. Estimates were derived by either pricing staff assigned to providing the service or from similiar services charged to Food Service Programs by other Maryland school systems.

Exhibit 5.3

TOTAL TAX FUNDS ALLOCATED
TO FOOD SERVICE IN OPERATING BUDGET
FY 1982

Category	Object of Expenditure	Amount
10	01 - Position Salaries	$240,350
10	01 - Clerical Part-time	6,000
10	01 - Neogtiated COL	23,455
10	03 - Supplies and Materials	13,611
10	04 - Staff Travel and Fees	11,069
10	04 - Free and Reduced Priced Meal Supplements	279,789
9	04 - Fixed Charges	18,760
	Total	$593,034

Exhibit 5.4

POTENTIAL FOOD SERVICES REIMBURSABLE EXPENSES

Expense	Estimated Amount
Utilities	$149,000
Accounting	80,000
Transportation	50,000
Data Processing	50,000
Equipment Maintenance	50,000
Total	$379,000

Exhibit 5.5 displays data obtained from other Maryland school systems as to their local support to the Food Services Program. Only two other LEAs surveyed have an allocation for Category 10 funds. Baltimore County Public Schools supports the salaries of Food Service administrators with an allocation of approximately $200,000, and Baltimore City provides $45,000 to supplment the milk fund. Although there seems to be no consistent pattern of

Exhibit 5.5

LOCAL SUPPORT TO THE FOOD SERVICE PROGRAM BY COUNTY FY 1981*

County	Category 10 Funds	Costs Collected from Food Services				
		Utilities	Accounting	Transportation	Data Processing	Equipment Maintenance
Howard County Public Schools	No	No	Yes	Yes	Yes($10,000/yr.)	No
Prince George's County Public Schools	No	Yes($100,000/yr.)	No	Yes	Partial	No
Anne Arundel County Public Schools	No	Yes($200,000/yr.)	Yes	Yes	No	Yes
Baltimore City Public Schools	Yes($45,000)	No	Yes	Yes	Partial	Yes
Baltimore County Public Schools	Yes($200,000)	No	No	Yes	No	No
Montgomery County Public Schools	Yes($574,000)	No	Partial	No	No	No

*Source: Interviews with food service directors in each county.

charging the Food Services Program for services provided by the LEA, all other LEAs charge the Food Service Programs for at least two of the listed major services. The types of charges with the largest dollar volumes are utilities, accounting, and data processing.

Anne Arundel and Prince George's County Public Schools charge the Food Service Program annually for approximately $100,000 and $200,000, respectively, for estimated utilities use. In three school systems, the Food Services Program pays the direct salaries and benefits of the 3-5 account clerks assigned to maintain Food Services financial records. In three of the LEAs surveyed, the Food Services Program either paid a flat rate charge for data processing services or in some other way (purchase of equipment or salary support to programmers) partially supported the services received. MCPS was the only LEA not to charge the Food Services Program for delivery/transportation services.

Whether funds are budgeted in Category 10 or Category 61 for supervisory or other Food Services expenditures does not affect the total dollars required to provide food services. The only difference is the source of the funds. The more funds that are moved from Category 9 or 10 to Category 61, the higher the income from the sale of meals must be. Increased revenue from sales is usually directly translated into increased meal prices. Consequently, the issue becomes one of policy rather than management: to what extent should Montgomery County local tax dollars support the Food Services Program? The issue becomes increasingly complicated, however, as the federal government threatens to significantly reduce or eliminate per meal cash reimbursements. Who, the purchaser of the meal or all citizens through tax supported Category 10, should bear any potential additional costs necessitated by the reduction or elimination of the federal reimbursement?

The effect of passing significant cost increases on to the purchaser through increased meal prices could adversly effect participation rates. The American Food Services Association has predicted that for every penny price increase of a meal, schools can expect a 1 percent decrease in participation. In an effort to estimate the effect of a price increase on school lunch sales, parents of students and secondary students presently buying full price lunches were asked during FY 1981 about the maximum price they would be willing to pay. Exhibit 5.6 shows that most parents and students were in agreement that $.80 is the maximum they are willing to pay for a regular lunch. Grade did affect the maximum amount either student or parents were willing to pay. Almost a third (31 percent) of the students and 14 percent of parents indicated they would stop purchasing the lunch if the price was raised above the 1980-81 $.65 price. Another third of the students (32 percent) and a quarter of the parents (25 percent) said that $.70 was the maximum.

For the 1981-82 school year, MCPS raised the price of the regular elementary school lunch from $.65 to $.80 and the regular secondary lunch from $.70 to $.85. Exhibit 5.7 compares the prices charged for elementary and secondary regular and aternative lunches for all 24 school districts in Maryland. With the exception of a few small LEAs on the Eastern Shore and in the far western end of the state, MCPS lunch prices are at or below that charged by other LEAs. When compared to the other large counties in the Washington-Baltimore area, MCPS's prices are among the lowest. Exhibit 5.8 depicts, by type of school, the effect of meal price increases had on MCPS participation rates between October, 1980, and October, 1981. During this period, the price of the regular elementary lunch was raised $.20 to $.80, and the regular

Exhibit 5.6

MAXIMUM PRICE* STUDENTS AND PARENTS
ARE WILLING TO PAY FOR LUNCH**

	Students			Parents			
	Gr. 8	Gr. 11	All	Gr. 3	Gr. 5	Gr. 7/10	All
Nothing; I wouldn't buy it anymore	32	27	31	15	17	9	14
up to 70¢	34	30	32	30	25	17	25
75¢ - 80¢	17	19	18	18	13	18	16
85¢ - 90¢	2	7	4	5	6	11	7
95¢ - $1.10	1	5	3	3	5	7	5
Any amount	2	2	2	2	2	3	2
Not applicable.***	12	11	11	29	33	36	33

*Lunch price increases are normally only considered at $0.05 intervals.
**Table entries are percentage of respondents who checked a response.
***I/my child receive(s) a free or reduced price lunch, or I/my child never get(s) the school lunch.

Exhibit 5.7

LUNCH PRICES BY COUNTY
FY 1982

County	Elementary Lunch	Secondary* Lunch	County	Elementary Lunch	Secondary* Lunch
Allegany	$0.60	$0.80-$0.85	Harford	$0.90	$1.00-$1.25
Anne Arundel	.75	-	Howard	.95	1.00- 1.25
Baltimore City	.80	.90	Kent	.80	-
Baltimore County	.90	1.00- 1.10	Montgomery	.80	.85
Calvert	.85	.90	Prince George's	.90	.95
Caroline	.80	.90	Queen Anne's	.75	1.00
Carroll	.85	.95	St. Mary's	.90	1.00
Cecil	.90	1.00	Somerset	.65	.70
Charles	.90	1.00	Talbot	.60	.65
Dorchester	.80	-	Washington	.85	.90
Frederick	.90	1.00	Wicomico	.85	-
Garrett	.55	.65-.70	Worcester	.80	-

*When two prices are listed the first is for the regular lunch and the second is for an alternative lunch.

secondary lunch was also raised $.20 to $.85. Although the total decrease in participation was 8 percent, senior highs only lost 5 percent, while junior highs lost 11 percent. In all cases the decrease experienced by MCPS was less than predicted by the American Food Services Assocation.

For purposes of comparison, in October, 1981, Food Services staff priced out at a local grocery store a typical bag lunch brought from home and determined the cost to be $.91 without including the cost of the bag or preparation time. Likewise, they determined that a similiar fast food lunch would sell for about $2.50 and not contain all the nutrition of a school lunch.

Exhibit 5.8

COMPARISON OF PARTICIPATION RATES BY
TYPE SCHOOL OCTOBER 1980 TO OCTOBER 1981

Type School	October 1980 Participation Rate*	October 1981 Participation Rate	Change**
Elementary	48	40	(8)
Junior High	50	39	(11)
Senior High	34	29	(5)
Total Secondary	40	33	(7)
Total	44	36	(8)

*Participation rate was calculated by dividing the average daily lunches served by the September 30 enrollment.
**( ) represents a decrease.

Costs of Food Service Delivery

Major Components of Costs

The total cost of Food Services direct labor in FY 1980 was $4,188,521 which was 40 percent of the total Food Services expenses. Another $1,192,337 (11 percent) was spent for fixed charges associated with direct labor. In the same year, $4,508,671 was expended for food (43 percent), $551,562 (5 percent) for supplies and materials, $50,839 (0.005 percent) for furniture and equipment, and $7,926 (0.001 percent) for travel and other expenses.

Exhibit 5.9 compares the changes in costs of the four major Food Services components over the four year period FY 1978 to FY 1981. The total labor component increased only moderately during the period, and yearly increases were actually below the cost of living salary increases given MCPS employees. The other three component costs fluctuated significantly from fiscal year to fiscal year but were generally at or below the inflation rate. Exceptions are noted in the FY 1980 increase in supplies and materials. This cost component includes the cost of disposable paper supplies, and the increases might be

Exhibit 5.9

COMPARISON OF FOOD SERVICE COMPONENT COST CHANGES
FY 1978 - FY 1981

Fiscal Year	Total Labor Cost	Percentage Labor Cost Change From Pevious FY	Total Food Cost	Percentage Food Cost Change From Previous FY
1978	$3,771,707		$4,164,960	
1979	3,979,154	5.2	4,671,225	10.8
1980	4,188,524	5.0	4,508,672	(3.5)
1981	4,532,256	7.6	5,168,860	12.8

Fiscal Year	Total Supplies and Materials*	Percentage Supplies and Materials Change From Previous FY	Total Furniture and Equipmemt	Percentage Furniture and Equipment Change From Previous FY
1978	$ 388,703		$ 29,360	
1979	417,906	7.0	18,529	(36.9)
1980	551,564	24.2	50,840	63.6
1981	559,891	1.5	22,226	(56.3)

*includes disposables
( ) indicates a decrease

accounted for by the tremendous cost increases of paper-related products experienced that year. Furniture and equipment expenditures seem to follow a biannual cyclic pattern not related to inflation increases.

Energy Conservation and Utility Costs

As MCPS does not currently have the capability of identifying utility costs by program, it is impossible to determine the actual utility costs associated with the School Lunch Program. The results of the cafeteria manager and satellite worker surveys and the interviews with Food Services Management

would indicate, however, that steps are being taken to conserve energy in school cafeterias. These include the following:

- o Turning out lights and other electrical equipment where possible
- o Replacing of seals on refrigerators and freezers
- o Controlling the use of vent fans
- o Converting to convection ovens
- o Reducing the number of mixers in use
- o Using plastic shields over freezer doors
- o Controlling the temperature of hot water system

Investment of Food Services Funds

Current Practices

At present, MCPS does not invest excess or available Food Services Funds. Food Services Funds are not maintained in a separate fund. Although identifiable, Food Services Funds are co-mingled with other monies in the General Fund and are used to pay any valid MCPS expense. All Food Services income and reimbursements are deposited in the General Fund, and all Food Services expenses are paid from the General Fund. A ledger of debits and credits to the General Fund is maintained to control the separation of the various fund monies. MCPS frequently uses Food Services Funds to pay non-Food Service expenses. As a result, MCPS makes less frequent and smaller requests for operating funds from the county government. This allows the county government to maintain and invest MCPS operating funds for a longer period of time. In effect, however, the county government rather than the MCPS Food Services Program is gaining the benefit of the investment of Food Services Funds.

Food Services Funds potentially available for short-term investment are daily receipts from the sale of meals, state and federal reimbursements, and the Food Services surplus carried forward annually. These three sources of revenue when reduced by occurring Food Services expenses (food supplies, salaries, etc.) create a daily balance which theoretically should be available for MCPS investment.

Cafeteria managers/satellite workers deposit cafeteria receipts daily in noninterest bearing checking accounts at convenient branches of local banks. Currently, each school has a separate cafeteria checking account. In all, 183 separate checking accounts exist for this purpose in 12 individual banks. At the end of each month, September through June, the Division of Accounting generates a check from each school account to transfer the funds to a central Food Services account and then from that account to the F account (General Fund) from which all MCPS expenses are paid. During FY 1981 daily receipts from the sale of breakfasts and lunches generated an average daily revenue of $34,500. Exhibit 5.10 shows the total amount of money accumulated each month in noninterest bearing checking accounts. The average monthly balance of these accounts was $688,806 in FY 1981.

Food Services account and then from that account to the F account (General Fund) from which all MCPS expenses are paid. During FY 1981 daily receipts from the sale of breakfasts and lunches generated an average daily revenue of $34,500. Exhibit 5.10 shows the total amount of money accumulated each month in noninterest bearing checking accounts. The average monthly balance of these accounts was $688,806 in FY 1981.

Exhibit 5.10

MONTGOMERY COUNTY PUBLIC SCHOOLS
SCHOOL LUNCH FUND CASH SALE PROCEEDS
JULY 1, 1980 TO JUNE 30, 1981

Month	Cash
July 31, 1980	-0-
August 31, 1980	-0-
September 30, 1980	790,726
October 31, 1980	885,474
November 30, 1980	691,872
December 31, 1980	620,558
January 31, 1981	711,604
February 28, 1981	800,794
March 31, 1981	893,036
April 30, 1981	668,312
May 30, 1981	825,689
June 30, 1981	-0-

Periodically throughout the year MCPS receives state and federal cash reimbursements based on the number of meals served. Exhibit 5.11 shows the amount and percentage of total for each of these payments during FY 1981. These funds, like daily receipts, are credited to the Food Services Fund and deposited in the General Fund where they are available for paying any valid MCPS expense. Discounting July and August when no cash reimbursements are due, MCPS missed receiving payments in three months. Consequently, over a third (36 percent) of the total federal reimbursement was received during the last month of the fiscal year.

The third source of funds which contribute to the potential funds available for investment is the Food Services surplus that is carried forward each fiscal year. For example, the cash surplus in the general account debited to the Food Services Fund on June 30, 1981, was $1,245,977. This debit is held in the General Fund for two months during the summer during which time few Food Services expenses were paid from it.

Exhibit 5.11

SCHEDULE OF STATE AND FEDERAL RECEIPTS
OF SCHOOL LUNCH CASH REIMBURSEMENTS
FY 1981

Month	State Reimbursements Amount	State Reimbursements Percentage of Total	Federal Through State Reimbursements Amount	Federal Through State Reimbursements Percentage of Total
July	$ -0-	-	$ -0-	-
August	-0-	-	-0-	-
September	$ 28,217	8.7	304,705	9.2
October	28,217	8.7	-0-	-0-
November	28,217	8.7	575,824	17.4
December	28,217	8.7	293,449	8.9
January	31,156	9.6	299,979	9.1
February	31,156	9.6	299,979	9.1
March	13,174	4.1	211,631	6.4
April	-0-	-0-	-0-	-0-
May	-0-	-0-	-0-	-0-
June	93,468	28.9	1,199,916	36.3
Receipts during FY	281,822	87.0	3,185,483	96.4
Balance Due MCPS	41,940	13.0	119,143	3.6
Total Anticipated Receipts	323,762		3,304,626	

Practices of Other Maryland LEAs

A survey of five other large school systems in Maryland[1] found that all five maintained a separate account for Food Services Funds and invested these funds for the benefit of the Food Services Program. Although each school system had slightly different procedures for collecting revenues and investing funds, each earned $50,000-$170,000 per year in interest for the Food Services Program. Whereas MCPS removes daily cash receipts from noninterest accounts monthly, the school systems surveyed did this at least once per week and some as frequently as twice per week. These funds were put into the a Central Food Services Fund for investment. Instead of each school having its own individual account, no more than eight accounts were found in the other districts. Cafeteria managers made daily deposits in the closest branch bank of the 5-8 banks with accounts. With one exception, the school district's financial officer was responsible for investing the daily balance in the Food Services account. (In Howard County, the assistant director for food services had this responsibility.) In all cases, investments were in short-term secure 1-30 day re-purchase agreements negotiated with banks and

[1]School systems surveyed were: Prince George's, Howard, Baltimore County, Anne Arundel and Baltimore City.

securities dealers. Federal regulations allow school districts to carry a three-month cash surplus in Food Services accounts, and all five school districts surveyed carried a surplus. State and federal cash reimbursements were also deposited directly into the central Food Services account.

Federal Regulations Concerning Investment

U.S. Department of Agriculture regulations state that all program income (including children's payments and cash reimbursements) must be used for program purposes. Interest earned from the investment of surplus program funds has been defined to be program income and must, therefore, also be used solely for the purposes of the Food Services Program. As previously described, MCPS does not currently invest surplus Food Service Funds. These funds are used to pay general operating expenses, allowing MCPS to delay requesting funds from the county government, thereby allowing the county government to earn additional interest income on the funds. In order to ensure full complicance with the USDA regulations, MCPS should consider establishing a separate account for Food Services Funds and investing any surplus in such a way that interest income is returned directly to the Food Services Program.

Meal Pricing Structure

Prices for full paid and reduced price lunches and breakfasts are established annually prior to the start of the school year by the Board of Eduction upon recommendation of the Food Services Director. Data from the previous fiscal year is used to determine actual food costs and adjusted by anticipated changes in bid prices. Food costs are then estimated for the ten most popular menus which take into account estimated waste and other such factors. Labor cost increases are estimated and, based upon the present income level, a projected current fund balance is determined. The participation level is estimated from enrollment projections and past experience of MCPS and other Maryland county school systems of participation rate changes caused by meal price changes. Meal price recommendations are then formulated which, when combined with the estimated federal and state cash reimbursements, will balance the estimated expenses. Although detailed cost accounting data and computer support are not available for this process, this manual approach has in the past few years produced amazingly accurate results and indicates the value of the experience of the Food Services management staff.

A la carte prices are also determined centrally and applied uniformly across all schools. Actual food costs from the previous fiscal year are reviewed and adjusted for projected increases/decreases. Where possible, costs of individual items like milk are adjusted to reflect actual fluctuations. Price lists with definitions of standard portion sizes are distributed to principals and cafeteria managers. A la carte prices are established in concert with the Food Services goal of selling well-balanced meals. Consequently, a la carte prices are set such that they do not discourage students from buying a full lunch.

Impact of School Closings on Food Service Costs

The closing of schools and the resulting increased enrollment in surrounding schools can have an impact on the operation and cost of the school lunch program. Food Services has, however, had little involvement with school closing decisions or the development of the 15-year facilities plan. From a Food Service perspective, certain schools would be better to close than others because of kitchen facilities, staffing, participation, and profitability. On the other hand, it is more efficient to increase the number of meals to be served at certain schools than others. For example, if a school has limited preparation or serving facilities, it may be necessary to increase the number of lunch periods to accommodate the increased number of students, with possible implications on the instructional program.

Not all surplus kitchen equipment from closed schools can be used effectively in MCPS. Future closings (June, 1982) of a large number of schools will create a significant surplus of good useable kitchen equipment. It is important that proper planning be undertaken for the sale of this surplus equipment; otherwise, it may end up being disposed of as scrap rather than useable equipment. Funds raised from the sale of surplus kitchen equipment should be returned to Food Services rather than being deposited in the General Fund.

Effect of Code Compliance on Food Service Costs

Although the lack of cost accounting and program chargeback procedures make it almost impossible to calculate or estimate, there are costs to MCPS caused solely by compliance to local, state, and federal codes and regulations. Some of these costs are born directly by Food Services in the form of equipment expenditures and cafeteria staff salaries necessary to perform certain daily tasks. Additional labor costs are absorbed by maintenance staff in performing modifications/maintenance necessary from inspections and compliance with new codes. Some annoying inconsistencies were found where one regulatory agency would require one "action" and another regulatory agency would write that same "action" as a code violation; e.g., the health department wants screens on all windows and the fire marshall doesn't. Modifications to facilities to comply to new codes seemed to be a major expense. Examples are the following

- Manifold sink installations
- Waste water vacuum breakers
- Plastic light shields
- Removal of unused equipment
- Fire proofing exhaust hoods

Cost of Serving Additional Groups

The Division of Food Services provides meal service to a number of student and adult groups on a cost reimbursable basis. The Department of Health and Human Services and the Department of Agriculture stipulate that public school system

Food Services organizations be the first choice of these agencies when food services are required. A partial listing of these groups includes the following

- o Various child day care programs
- o Various Senior Citizens Programs
- o The Summer Feeding Program for Low Income Children
- o Meals on Wheels

In all such programs, Food Services is a vendor (under contract) to the local agency for providing the meal service. In order for MCPS to provide services to these organizations they must be nonprofit and unable to obtain services from the private sector at a comparable cost. These programs allow Food Services to utilize kitchen facilities during nonlunch time periods and during the summer and provide additional summer employment to a number of staff. A number of different food preparation and delivery methods are used in these programs. For some senior citizen programs, meals are prepared in bulk at a central or on-site kitchen and delivered to other schools or senior citizen homes where they are portioned and served. In other programs prepackaged satellite type meals are prepared and served.

Current basic accounting and reporting procedures allow individual cafeterias to report expenditures and participation in such programs. The Division of Accounting has the responsibility of sending invoices (bills) to the agencies receiving services and collecting payments. As MCPS does not currently have the ability to accurately identify the cost of in-kind services provided to Food Services, these costs are not being recovered from outside agencies to which the Division of Food Services provides services. Except as noted abo e and the fact that some problems have been experienced in collection, accounting procedures appear to be adequate to handle these additional Food Services Programs.

School Cafeteria Audits

Seventeen (50 percent) of the 34 schools selected for participation in this study were visited for an audit of cafeteria financial records and review of accounting procedures. In general, all schools visited were found to be operating in an acceptable manner. However, two financial control problems were identified and warrant attention. They were control of cash and security of food inventories.

Cash Control

Cafeteria managers are required to keep tallies of categories of items for control and reimbursement purposes. This entails maintaining a tally sheet which should reconcile with the amount of cash received on a given day. Although adequate control procedures were in effect for lunch, breakfast, and milk counts, most schools did not keep sales records for a la carte items. A la carte production records are maintained in the kitchen, but are not available at the point of sale, and are not used for determining a la carte sales. Consequently the amount of a la carte sales is derived by subtracting calculated amounts for lunch, breakfast, and milk from the total deposit for the day and then entering the difference as a separate item subtotal. By

operating under this concept, no control over shortages or overages is possible.

This concern was also observed in schools utilizing cash registers (most schools have only cash boxes) because tapes were used mainly as a source to obtain counts for the various categories of lunch, breakfast, and milk sales. Amounts were then calculated and the difference lumped into a la carte as described above.

To ascertain how timely deposits were made, a comparison of amounts and dates on tally sheets were made with validated deposit tickets. Generally there was no more than a one-day delay which was due to use of night depositories. However, one school frequently had delays of two to seven days. Food Services was advised of the situation.

Food Services policy requires that money be deposited daily, not locked in a storage room or taken home to be counted and deposited another day. On many occasions while visiting the schools, cash boxes with the day's collections would be found sitting unattended on a table or desk near an outside entrance. This creates a very vulnerable situation and should be discontinued.

Security of Inventory

Most schools had three general types of storage needs: perishable food, nonperishable foods, and paper supplies. Perishable foods are locked in freezers and refrigerators to which maintenance repairmen have keys. Nonperishable foods are secured in storage rooms which in some cases are accessible with master keys. Paper supplies were sometimes stored in open areas within the kitchen or remote storage areas that could be accessed with a master key.

Cafeteria Use of Cash Registers

As part of the financial audit, schools were questioned about the use of cash registers in cafeterias. The general consensus of cafeteria staff was that the slowness of the conventional registers created "bottlenecks" and resulted in lengthened lunch lines. Although this does seem to be the case with conventional cash registers, the new electronic cash registers (item key type) would appear to solve this problem. An electronic cash register is currently being used at Northwood High School on a trial basis. Observation of its use showed that, although some users thought they were slightly slower, it appeared to operate smoothly and without delay. The electronic cash register maintained detailed records for most a la carte items as well as reimbursable items. An audit trail and control totals were also available.

Cost might not make the use of electronic cash registers feasible in most elementary schools; however, there does appear to be some justification for their use in secondary schools. Although all secondary schools now have cash registers, they are not the electronic type and are not being used for cash control purposes. The advantages of electronic cash registers are (1) improved control of a la carte items, (2) availability of an audit trail and

control totals, and (3) ease of preparing accounting reports. These advantages must be weighed against the large, one-time cost of purchasing electronic cash registers. A possible future use of cash registers is point of entry data collection which might eliminate the current "bubble sheet" data collection form.

Implications of the Findings

A major policy issue identified in the findings of this chapter is the question of the extent that tax-supported funds should be utilized to provide supplemental funding to the Food Services Program. As previously identified, the Food Service Program is assisted by both direct allocation of funds in the Operating Budget (Categories 9 and 10) and through in-kind contributions of support services. The most significant implication of local supplemental funding is the direct relationship it has with the price charged for meals. The larger the amount of supplemental funding, the less Food Services has to charge for meals. Without consideration of the effect of price changes on participation rates, using FY 1981 expense and participation data, it was projected that a $.03 increase in the price of a meal would be necessary to cover each additional $250,000 of expenses. For example, if $500,000 of Category 10 funds had been reduced from the FY 1981 Operating Budget, the price of a lunch would have to have been raised from $.65 to $.71 to cover these additional expenses. Eliminating the full $593,000 in FY 1982 support in the Operating Budget and charging the Food Services Program for all MCPS provided services listed in Exhibit 5.4 represent an additional $.11 increase in the price of lunch. This price increase would bring the MCPS price up to the prices in Baltimore, Howard, and Prince George's counties. The analysis is more complicated, however, because increasing prices does have an effect on participation, which in turn has an effect on revenue.

Although it is difficult to project accurately the amount of income that could be generated by MCPS investment of Food Services Funds, it is estimated at $150,000 per year. For example, twice weekly clearing out the cafeteria checking accounts and investing the $688,806 average monthly balance of daily receipts would generate over $20,000 per year in interest revenue. Investment of the annual Food Services surplus for the two inactive summer months alone could generate another $25,000. Maintaining Food Services Funds in an account separate from the General Fund and investing the daily surplus might require a modification in the present computer-supported accounting application.

As discussed earlier, Category 61 is an enterprise fund and is not supported from local tax dollars. This chapter recommends the elimination of local tax support to the Food Services Program (Category 10 and part of Category 9) and the placement of these funds in Category 61. Although this recommendation will generate significant savings to the taxpayers of Montgomery County, it will not reduce the size of the MCPS Operating Budget. This is due to the fact that, although not funded by the County Council, Food Services Funds are, by state law, included in the Operating Budget and have the effect of making the budget appear larger than it actually is. The alleviation of this situation will require, at a minimum, authorization from the County Council to change budget procedures and might even require changes in the state law.

Recommendations

It should be noted that many of the recommendations made elsewhere in this report, particularly in Chapters 11 and 12, affect budgeting, costs, and accounting. However, the following significant recommendations are derived from the findings of this chapter:

- The superintendent and the Board of Education should review the current policy of providing local tax support to the Food Service Program. Considerable reductions in the Operating Budget could be obtained by a decision to reduce or eliminate this support.

- MCPS should create a separate central Food Services account into which all revenues (and surplus) should be deposited and out of which all Food Services expenses should be paid. Cafeteria receipts should be deposited daily in no more than five to eight invididual accounts and removed by the Division of Accounting twice weekly. Procedures should be developed whereby daily balances of the Food Services account can be determined. The Director of the Department of Financial Services should be given the authority and responsibility to invest daily surplus Food Services Funds in short-term (1-30 day) securities such as repurchase agreements. Under our interpretation of Department of Agriculture regulations, the interest earned from these investments must be used for the purposes of the Food Services Program.

- Investigate with the Maryland State Department of Education what, if any, procedural changes need to be made to ensure that MCPS receives the maximum Food Services cash reimbursements at the earliest possible date and that these funds are deposited in and invested from the central Food Services account.

- The alternatives by which Food Services Funds and other reimbursable funds can be removed from the Operating Budget should be explored.

- The Division of Food Services should be involved earlier in discussions concerning school closings. The impact of school closings on the ability of the Division of Food Services to provide cost effective quality meals should be considered. When school closing decisions are made, procedures for the sale of surplus kitchen equipment should be initiated early enough to complete the process prior to the closing of schools.

- Secondary schools should account for a la carte item receipts separately and generate control totals rather than the current practice of determining a la carte receipts by subtraction. Consideration should be given to the purchase of electronic cash registers for this purpose.

- All school food and supply storage areas should be locked with special keys and be under the control of the principal and/or cafeteria manager.

- If MCPS implements a cost accounting system, an administrative overhead fee to cover MCPS in-kind contributions to Food Services should be determined and added by the Divison of Accounting to all invoices sent to outside agencies to which the Division of Food Services provides services.

CHAPTER 6 SUMMARY

OPERATION OF SUPPORT FUNCTIONS

All food and other supplies are ordered by cafeteria managers and satellite workers from a series of 10-12 approved bid lists. Vendors make deliveries directly to schools in accordance with procedures specified in the bid. All vendor contact is handled centrally by Food Services staff rather than by individual cafeteria managers. Most cafeteria managers reported that the present ordering procedures posed no problems. The procurement process from the initiation of bid specifications to contract award averages 14 weeks. The demonstration, testing, and evaluation of new/substitute products, equipment, and supplies is a prime responsibility of the central administrative staff of the Division of Food Services.

All cafeteria managers are required to take a complete inventory of food and other supplies on a monthly basis. Purchased foods are valued at the price shown on the latest invoice or updated bid list and commodities are valued from a list provided periodically by the Maryland State Department of Education. Monthly inventory data is utilized to varied degrees by different managers; some managers indicated they made little or no use of the data while other managers said they used the information for ordering. All inventories are currently conducted and maintained manually. Inconsistencies in the pricing of inventories and the exclusion of commodities make the comparison of food expenses from one school to another very distorted.

Present data processing support to the Division of Food Services can be divided into two categories: those data processing applications which were designed for general MCPS administrative purposes and those applications which have been specifically designed for the use of Food Services. In the spring of 1981, the Division of Food Services submitted the following seven "Summary of Need for New/Additional Data Processing Support" statements to the Task Force on Long-Range Planning for Future Use of Computer Technology

- o Inventory Control System
- o Cafeteria Accounting Improvements
- o Identification of Hidden Costs
- o Student Preference Surveys
- o Free and Reduced Price Meal Applications
- o Equipment Schedule
- o Average Hourly Labor Rate per Classification

The inventory control system to support the new Food Services Warehouse is currently under development by the Department of Management Information and Computer Services (DMICS). Some initial design work for a basic capability to monitor free and reduced price applications has been started by DMICS staff. Although not intended to meet all the requirements of the needs statement, it will provide basic capabilities at a much earlier date. None of the other five Food Services need statements were recommended for development in the task force report.

Montgomery County Public Schools participates in the National School Lunch Program and also receives funds to support the lunch program from the State of Maryland. Except for a half cent decrease in FY 82, the state cash reimbursement for free and reduced price meals remained consistent between FY 80 and FY 82. Federal cash reimbursements for reduced price meals started in FY 80 at $.8325 per meal, reached $.920 in FY 81, and decreased to $.6925 in FY 82. The federal reimbursement for free meals basically increased steadily between FY 80 and FY 82. The biggest change in the reimbursement for full price meals occurred during the 1981-82 school year when it decreased from $0.1850 to $0.1050 per meal. As of this writing, the Reagan Administration plans to ask for further reductions from the current $0.1050 to $0.0520 in July, 1982 and then totally phasing out the full price cash reimbursement in 1983. Assuming that all of the reduction would be passed on to the purchaser, the price of the regular MCPS lunch would have been raised from $0.65 to $1.08 in FY 81 if the $3,626,840 of federal cash reimbursements were withdrawn. If FY 82, the $.80 elementary lunch would have to go to $1.23 if this same level of federal cash reimbursements were withdrawn.

In addition to cash reimbursement for meals served, the federal government supports the school lunch and breakfast programs by providing large quantities of a variety of food commodities. MCPS received commodities with a dollar value of $1,799,194 in FY 1980. The primary difficulty of receiving commodities is the lack of lead time in notifying school districts that particular commodities have been allotted and/or shipped. However, most of the storage and distribution problems associated h the receipt of commodities should be resolved when the new central Food Services Warehouse begins operation in February, 1982.

Recommendations

- o A post-implementation evaluation of procuring, ordering, and distributing procedures and computer application currently under development for the new Food Service Warehouse should be conducted as part of the future Procurement and Supply Management MORE Study.

- o The Division of Food Services should consider the development (at its own expenses) of the data processing requirements it considers to be a priority and which are not recommended in the Report of the Task Force on Long-Range Planning for Future Use of Computer Technology.

- o Food Services staff should continue to lobby and encourage the continuance of the federal cash reimbursement and commodities programs.

- o A computer-supported inventory evaluation module should be developed whereby individual schools report only "quantities on hand" and individual item prices are maintained on a computer data base. Such a system would (1) require less time by cafeteria personnel, (2) provide more accurate date, and (3) make available standard item pricing among schools.

- For purposes of comparing school expenses, commodities should be valued in schools the same as the equivalent purchased items. It is anticipated that the new School Lunch Inventory Control System will accomplish this, when completed.

- The Department of Management Information and Computer Services should continue the development of the School Lunch Inventory Control System and include a menu planning/costing module and a small equipment inventory module in the second phase of the development.

CHAPTER 6

OPERATION OF SUPPORT FUNCTIONS

Introduction

The focus of this chapter is on those functions which, although supplementary to the direct delivery of food services, are vital to its efficient operation. Though many MCPS departments/divisions provide support to the Division of Food Services, only the more critical functions have been identified for study. The objectives of this chapter are to (1) review the ordering and procurement processes, (2) describe the present and planned food inventory storage and distribution systems, (3) study the procedure by which supplies and equipment are issued and controlled, (4) evaluate present and future computer support, and (5) identify the role that federal cash reimbursement and commodities play in the delivery of food services.

The Ordering Process

All food and other supplies are ordered by cafeteria managers and satellite workers from a series of 10-12 approved bid lists. A bid list is a collection of similiar food items which are supplied from a vendor under an approved contract for an established cost per item.

Individual cafeteria managers determine their food and supply needs by comparing the food required to prepare meals on the menu schedule with the food supplies in their current inventory. Managers complete the vendor-supplied order forms for food items on particular bids and forward orders to the Food Services central administration in accordance with a published order schedule. Food Services staff review all order forms received from schools, consolidate them by vendor, and call the vendor to come pick up the orders. Cafeteria managers can make modifications to written orders by phone within 48 hours of their submission. Vendors make deliveries directly to schools in accordance with procedures specified in the bid. The only exceptions to this procedure of sending order forms to Food Services are (1) cafeteria managers at on-site schools and satellite workers at satellite schools order ice cream, milk, and bread (on-site only) via telephone or written orders directly from vendors on the approved bid list, and (2) purchase of speciality food items not on the bid list can be made with written permission of the director of the Division of Food Services. All other vendor contact is handled centrally by Food Servicess staff rather than by individual cafeteria managers. Managers communicate comments on products or vendor service to Food Services staff via telephone and/or MCPS Form 240-3.

Most cafeteria managers (74 percent) reported that the present ordering procedures posed no problems. Occasionally, however, the need to predict food requirements two to three weeks in advance does pose an ordering problem. Some managers also reported a need for more frequent delivery of produce in order to ensure freshness. Overstocking and storage problems caused by the advance ordering process did not seem to create a significant problem.

The Procurement Process

The Division of Food Services prepares drafts of the general conditions and specifications for each of the 10-12 food supply bids approved each year. Each bid contains (1) technical specifications for each food item, (2) estimated quantities to be purchased during the period of the bid, (3) delivery specifications which list schools, frequencies of deliveries, and procedures to be followed for school delivery, and (4) other general conditions of the bid.

The draft bid specifications are reviewed and edited by the Division of Procurement and prepared in final format as a Request for Quotation (RFQ). The Division of Procurement is responsible for advertizing and distributing the RFQ's and for receiving responses in accordance with MCPS procurement regulations for competitive bidding.

Upon receipt, the Division of Procurement transmits qualified quotations to Food Services for technical evaluation. Food Services then (1) reviews quotations for completeness, responsiveness to specifications (which includes comparing proposed substitute food items to specifications), (2) calculates and compares costs, and (3) calculates the value of the bid. New products/substitutions may be demonstrated and/or tested in the field. Plant inspections and vendor visits may also be made for new vendors or products being processed by new suppliers. The central administrative staff, headed by the director, formulate recommended awards and send them to the Division of Procurement. Award resolutions are prepared for the Board of Education by the Division of Procurement and normally transmitted via the superintendent to the Board of Education at the monthly business meeting. The ultimate review and approval authority for Food Services supply contracts is with the Board of Education. The procurement process from the initiation of bid specifications to contract award averages 14 weeks.

Product Evaluation

The demonstration, testing, and evaluation of new/substitute products, equipment, and supplies is a prime responsibility of the central administrative staff of the Division of Food Services and receives a significant amount of time and resources. Initial review of new food products is made by the division director, who evaluates the product for suitability within the MCPS Food Services program. If the product is judged to merit further consideration, a Food Services field supervisor arranges for a demonstration of the product for the entire central administrative staff. Following the demonstration and review of the product's technical specifications, staff provide written evaluations and numerical ratings of the product. The decision to field test a product is based on these ratings. Selected products are then field tested in 2 to 4 school cafeterias. Depending on the product, staff will either observe student reaction to the new product or convene a panel of students for a more formal evaluation. Cafeteria staff provide input concerning preparing and serving of the new product. Decisions are then made by the central administrative staff as to expanding the field test, putting the new product on the next bid list, or terminating consideration of the product.

The Storage and Distribution Process

Currently, individual schools receive most food and supply items directly from the vendor. Each bid contains specific procedures for delivery of food items to schools. For example, milk suppliers are required to place and rotate milk cases in the cold storage area of each school. Vendors are not allowed to "drop" supplies at the unloading area and must deposit them in specific storage areas. Although the food storage capacities of individual schools vary significantly, schools generally have sufficient dry and refrigerated storage space. In those elementary schools where this is not the case, storage may be one of the factors considered in conversion to satellite operation.

Most (81 percent) cafeteria managers and satellite workers reported that they check shipments in as they receive them, and only in a few cases do custodians assume this responsibility when the manager/worker is not in the building to receive orders. When cafeteria managers receive orders, they sign the invoice and send it to the Division of Accounting. If the order was incomplete, damaged, or had some other type of problem, the manager calls the Food Services office.

All cafeteria managers are required to take a complete inventory of food and other supplies on a monthly basis. Purchased foods are valued at the price shown on the latest invoice or updated bid list, and commodities are valued based on a list provided periodically by the Maryland State Department of Education. Food and other supplies inventories are summarized into major categories and submitted to accounting. Accounting reviews the information and submits it to the Division of Data Processing Operations for data entry. The monthly beginning and ending inventories of purchased food are used to adjust the expense figures for inclusion in the monthly Profit and Loss Statement. The monthly inventory is sent to the Food Services central administration where it is reviewed to check the types of food items being ordered and used by schools to identify overstocked conditions. Food and supply inventories can be reviewed by field supervisors as part of the individual cafeteria Profit and Loss Statements and used to evaluate the effectiveness of management at the school level. For example, supervisors might observe if the inventory on hand is appropriate for the number of meals served and the size of the operation at that individual cafeteria. A mechanism exists whereby field supervisors or cafeteria managers can initiate procedures to move surplus food items from one school to another.

Monthly inventory data is utilized to varied degrees by different managers; some managers indicated they made little or no use of the data, while other managers said they used the information for ordering. In addition to the monthly inventory, some managers indicated that they conduct spot inventories prior to ordering or maintain a perpetual inventory. All inventories are currently conducted and maintained manually.

Two problem areas were noted with regard to inventories and the effect they have on the profit and loss statement.

- Inventory valuation--The process of assigning a dollar value to an inventory requires a cafeteria manager to manually search records for the last time a particular item was received and value the entire inventory

based upon that unit cost. To save time, the cafeteria manager often obtains the cost from the bid list at the beginning of the year and carries it forward from month to month, which causes inconsistent inventory pricing from one school to another. This, coupled with the fact that inventories are often taken over the course of a week, makes the validity of published figures questionable.

- o Inventories of commodities--For allocation purposes, the value of commodities is established by the Maryland State Department of Education. Schools are furnished with lists of these prices for inventory valuation purposes. Inventories of commodities are not taken into consideration when preparing Profit and Loss Statements. As a result, a school using federal commodities has fewer expenses than a school using purchased food even though they used the same quantity of food.

Thus inconsistencies in the pricing of inventories and the exclusion of commodities make the comparison of food expenses from one school to another very distorted.

Since the performance of a cafeteria manager is evaluated in part through comparison with other similar schools, a more equitable method of determining expenses should be developed. Hence, a more accurate method of valuing and reporting inventories is needed.

Impact of New Food Service Warehouse

Over the past four years several studies have been conducted which focused on the Food Services warehouse and distribution facilities. As a result of these studies a decision was made to construct a central Food Services warehouse at the County Service Park near Gaithersburg. The new facility is scheduled to begin operations in February, 1982. Category 61 of the FY 1982 Operating Budget contains 13 supporting service positions to staff the new warehouse. The space capacity of the new warehouse is as follows

Freezer	6,000 square feet
Refrigerator	1,500 square feet
Warehouse	15,000 square feet
Administrative Space	3,100 square feet
Total	25,600 square feet

The Division of Systems Development, with the design assistance and input of Food Services, is currently designing a new School Lunch Inventory Control System (SLICS) which is required for efficient operation of the new warehouse. The central warehouse will have significant impact on purchasing, ordering, and distributing procedures currently being used by the division. It is not the intent of this study to evaluate the new procedures now under development but rather to indicate potential changes and their corresponding impact. For example, federal commodities donated to MCPS are currently stored commercially, whereas in the future the new warehouse will accommodate them. Likewise, suppliers and vendors now deliver food supplies directly to individual schools, whereas the new central warehouse will receive most

supplies from vendors. It is anticipated that larger quantities of many food items may be purchased and that this will have a beneficial effect in the prices of these items. It has been previously estimated that the central food warehouse will save up to 20 percent of the cost of acquiring the $6 million in food and other supplies purchased annually.

Although new procedures for purchasing, ordering, and distributing food supplies for the new warehousing system were not available when this report was prepared, it is obvious that these procedures, coupled with the inventory central system under development, will be critically important to the efficient operation of the central warehouse. In addition, modifications to the food service accounting module will be required in order to interface with the new inventory control system.

Equipment

Written requests for kitchen equipment are made by cafeteria managers and satellite workers to the appropriate field supervisor. The business manager in secondary schools and/or the principal may also be involved with such requests. Major equipment items may be obtained from transfer from closed schools or through inclusion in the operating budget. The length of time required to obtain a piece of new equipment seems to vary greatly depending upon the cost, its availability from closed schools, whether its need was anticipated in the current operating budget, and bid procedures.

Present and Future Computer Support

Present Computer Support

The present data processing support to the Division of Food Services can be divided into two categories: those data processing applications which were designed for general MCPS administrative purposes and those applications which have been specifically designed for the use of Food Services. The first category of computer support includes

- Furniture and equipment inventory
- General accounting (monthly account balances, etc.)
- Payroll
- Position control
- Operating budget
- Average daily attendance

Food Services utilizes these applications and the reports they produce in much the same manner as other departments/divisions in MCPS. The position control application is particularly useful to Food Services because of the extremely high number of people who are employed less than full time. As Food Services is only one of many MCPS users of this category of computer applications, a detailed analysis of these applications was not repeated in this study.

In addition to the above mentioned general administrative applications, the Department of Management Information and Computer Services has developed a cafeteria accounting application for use by Food Services. This system collects, in machine readable format, data concerning the daily operation of each cafeteria and produces a number of management reports. Participation data by types of program and receipts are collected daily and used to create a cafeteria accounting file.

Future Computer Support

In the spring of 1981, the division submitted the following seven "Summary of Need for New/Additional Data Processing Support" statements to the Task Force on Long-Range Planning for Future Use of Computer Technology

- o Inventory Control System
- o Cafeteria Accounting Improvements
- o Identification of Hidden Costs
- o Student Preference Surveys
- o Free and Reduced Price Meal Applications
- o Equipment Schedule
- o Average Hourly Labor Rate per Classification

These statements of need (see Appendix D) represent Food Services staff thinking on their computer support needs for the next five years. Two of these seven computer needs are discussed elsewhere in this report. (1) The inventory control system to support the new Food Services Warehouse is currently under development by the Department of Management Information and Computer Services (DMICS) and is discussed briefly elsewhere in this chapter. Although this application should meet most of the inventory control needs of the new warehouse, it will not provide the menu planning/cost capabilities and in-school inventory capabilities which were a part of the specifications of the School Lunch Inventory Control System. (2) Chapter 7, Management of Free and Reduced Price Meal Programs, recommends computer support to assist in the monitoring of applications for free and reduced price meals. As of the writing of this report, some initial design work for a basic capability has begun by staff of the Department of Management Information and Computer Services. This effort is in response to an earlier request to DMICS; and although not intended to meet all the requirements of the needs statement, it will provide basic capabilities at a much earlier date. The full capability for monitoring free and reduced price meal applications is one of the last recommended additional applications in the Business Service Plan in the Report of the Task Force on Long-Range Planning for Future Use of Computer Technology. None of the other five Food Service need statements were recommended for development in the report. Of the remaining computer needs, Food Services staff have identified the equipment scheduling capabilities as being their highest priority.

Involvement With Federal and State Programs

Montgomery County Public Schools participates in the National School Lunch Program, the largest federally supported child nutrition program. The law was authorized by the National School Lunch Act of 1946 to "provide assistance to the states in the establishment, maintenance, operations, expansion of school lunch programs, and for other purposes." School districts receive assistance

from the federal government through direct cash payments based on the number of meals served and receipt of large quantities of products which are referred to as commodities.

Exhibit 6.1 shows the history of federal and state per meal cash reimbursements rates for FY 1980 to FY 1982. The maximum rates show cash reimbursement for free and reduced price meals remained consistent for the period except for a half cent decrease in FY 1982. It should be noted that state funds are allocated each year for this program and paid according to the maximum rates in Exhibit 6.1 only until these funds are expended. The federal cash reimbursement, however, changed significantly by meal type during the period. Cash reimbursements for reduced price meals started in FY 1980 at $0.8325 per meal, reached $0.920 in FY 1981, and decreased to $0.6925 in FY 1982. The federal reimbursement for free meals has increased steadily between FY 1980 and FY 1982, except for a slight decrease in the second half of FY 1981. The biggest change in the reimbursement for full price meals occurred during the 1981-82 school year when it decreased from $0.1850 to $0.1050 per meal. As of this writing, the Reagan Administration plans to ask for further reductions from $0.1050 to $0.0520 in July, 1982 and then totally phasing out the full price cash reimbursement in 1983. In FY 1981, MCPS received $1,108,026 in cash reimbursements for full-price meals.

Exhibit 6.1

PER MEAL FEDERAL AND STATE CASH
REIMBURSEMENT BY TYPE MEAL
FY 1980 - FY 1982

Period	Federal			State		
	Full Price	Free	Reduced	Full Price	Free	Reduced
July 1, 1979- December 31, 1979	.1700	.9325	.8325	-	.1650	.1650
January 1, 1980- June 30, 1980	.1775	.9725	.8725	-	.1650	.1650
July 1, 1980- December 31, 1980	.1850	1.0200	.9200	-	.1650	.1650
January 1, 1981- June 30, 1981	.1600	.9950	.7950	-	.1650	.1650
July 1, 1981- August 31, 1981	.1775	1.0925	.8925	-	.1600	.1600
September 1, 1981- June 30, 1982	.1050	1.0925	.6925	-	.1600	.1600

Exhibit 6.2 shows the amount of cash reimbursement MCPS received from the federal government in FY 1981. The total amount of reimbursement ($3,626,840) represented 32 percent of the total Food Services income in FY 1981. For full-price paid meals, the federal reimbursement was normally around 21 percent of the total income for that meal type, while for reduced priced meals the reimbursement was approimately 91 percent of total income. For free meals the reimbursement was 100 percent of the income. In addition, local subsidies from the Montgomery County Government amounted to $258,964 for free and reduced price lunches. See Chapter 7 for detailed descriptions of the free and reduced price lunch and breakfast programs.

Exhibit 6.2

AMOUNT OF FEDERAL CASH REIMBURSEMENT BY MEAL TYPE FY 1981

Meal Type	Income From Sales	Federal Reimbursement	Percent of Total Income
Elementary Lunch-Paid	$1,877,324	$544,869	22
Elementary Lunch-Free	-0-	724,999	100
Elementary Lunch-Reduced	30,074	307,568	91
Secondary Lunch-Paid	2,114,216	538,983	20
Secondary Lunch-Free	-0-	466,772	100
Secondary Lunch-Reduced	13,751	140,537	91
Total Milk	406,522	270,012	40
Breakfast-Paid	70,029	24,174	26
Breakfast-Free	-0-	310,496	100
Breakfast-Reduced	6,360	73,587	92

Recent discussions surrounding the Reagan Administration's plans for elimination or reduction in federal cash reimbursements have raised concerns for the impact on MCPS Food Service Programs. Assuming the elimination of total federal funds were passed on to the purchaser, the price of the regular MCPS lunch would have been raised from $0.65 to $1.08 in FY 1981. In FY 1982, the $.80 elementary lunch would have gone to $1.23 if this same level of federal cash reimbursements were withdrawn. These projections are based on actual FY 1981 cost data which showed that each $250,000 in additional expenses would result in a $0.03 increase in the price of lunch. Thus, each 10 percent reduction in federal support would result in a little over $0.04 increase in the price of lunch. This analysis is based on participation rates, volume levels, and commodity support levels for the 1981-82 school year.

The primary costs to MCPS for accepting federal subsidies varies for cash payments versus commodities. The primary costs associated with receiving cash reimbursements are the record keeping burden associated with counting and reporting the number of various types of meals served and the administrative

burden required to verify that reimbursement does not exceed the cost of providing the meals. Compliance with the regulations constrains management in areas such as menu planning, portion control, and logistical procedures and Food Services managment feels that it contributes to increased plate waste. The impact of receiving federal commodities is discussed later in this chapter.

Value of Commodities Received

In addition to cash reimbursement for meals served, the federal government supports the school lunch and breakfast programs in local school districts by providing, through state departments of education, large quantitites of a variety of food products which are referred to as commodities, e.g., potatoes, chicken, fruits, flour, etc. Commodities may be delivered directly to the school district or sent to a food processor for use as raw materials to make a processed food. For example, flour, cheese and tomatos may be sent to a processor which uses these materials to make pizza under a contract with the school district.

Based on the statewide total dollar value entitlement for commodities of $0.1675 per lunch and $.03 per breakfast, MCPS received commodities with a dollar value of $1,799,194 in FY 1981. Of this amount $1,423,080 worth of commodities was actually received by MCPS, and $376,114 worth was sent directly to processors. The Maryland State Depsrtment of Education controls the allocation and distribution of commodities to the local school systems based on the district's Average Daily Participation.

Receipt and Distribution of Commodities

Commodities requiring refrigeration are shipped to a commercial warehouse leased and controlled by the Maryland State Department of Education (MSDE). MSDE notifies MCPS of its allotment of a given commodity in the warehouse, and it is the school district's responsibility to pick the commodity up at the warehouse and distribute it to individual schools. The Division of Supply Management provides this service on request from the Division of Food Services. To cover the expenses associated with the warehousing operation, MSDE charges LEAs an esculating monthly per case cost. Most nonrefrigerated commodities are shipped via rail car directly to the rail station in Rockville. The Division of Supply Management normally delivers such commodities directly to the schools from the railstation. Commodites are occasionally taken to the supply warehouse prior to delivery to individual schools.

Impact and Problems Posed by Commodities

The receipt of federal commodities has a significant impact on the purchasing of food items. A major difficulty is caused by the lack of lead time in notifying school districts that particular commodities have been allotted and/or shipped. The lack of information upon which to plan food purchases often results in receiving large quantities of commodities shortly after purchasing similiar food items. In addition, uncertainty as to the quantity of commodity supplied items MCPS will purchase during the life of a bid causes vendors to overprice such items.

The lack of sufficient notification of receipt of commodities also creates significant management and logistical problems dealing with storage and distribution. The Division of Supply Management must often, with little or no prior notice, reschedule its activities to pick up a box car load of commodities at the rail station in Rockville. With the current lack of central storage capacity, commodities must often be delivered to individual schools in advance of their need for them. This situation causes several problems in schools. Cafeteria managers sometimes may not know what commodities and in what quantities they are receiving and therefore have a difficult time planning for their utilization or may have difficulty finding storage space for them.

Many of the storage and distribution problems associated with the receipt of commodities will be resolved when the new central Food Services Warehouse begins full operation. Nonrefrigerated commodities can be delivered by rail to the new warehouse and unloaded directly into the warehouse for later planned distribution to schools in the same manner as purchased food items. MCPS can also save a significant portion of the MSDE storage charge for refrigerated commodities.

A major problem associated with the federal commodities program is the amount of control able to be exercised by local Food Services management. Local Food Services staff do not write product specifications for commodities, and control over the quality of commodities received is limited to providing feedback to the MSDE liaison regarding the degree of satisfaction with the products received.

The assistant director of Food Services has the responsibility of receiving commodities allotted to MCPS and allocating them to individual schools. Cafeteria managers indicate their commodity needs to the assistant director on a commodity order form. A procedure also exists whereby surplus commodities may be redistributed or transferred to schools when one school is in short supply and another has a surplus. Twenty percent of the commodities received by an LEA may be legally rejected and returned to MSDE. However, as these procedures could affect the quantity of future allocations of commodities and could result in lost revenue, it is not generally practiced. In general, cafeteria managers and satellite workers were satisfied with the quality of federal commodities they receive but expressed concern over the quantities received, storage, and lack of control. The reader should reference additional accounting problems posed by commodities which are discussed in Chapter 5.

Several national studies have been conducted that focus on the problems associated with the federal commodities program and alternatives to it. The most widely discussed alternatives are cash-based systems which would allow local school districts to purchase commodities locally. Thirty school systems are currently piloting the cash in lieu of commmodities and letter of credit alternatives, however, the probability of these or other alternatives being seriously considered is questionable because of political issues that always surround the National School Lunch Program.

CHAPTER 7 SUMMARY

MANAGEMENT OF FREE AND REDUCED PRICE MEAL PROGRAM

School districts participating in the National School Lunch and School Breakfast Programs are required to provide free and reduced price meals to any child who qualifies based on family income and size guidelines established by the Secretary of Agriculture. Montgomery County Public Schools participates in both of these programs and in FY 1981 served 1,689,964 free or reduced price lunches and 733,977 breakfasts. Except for the additional functions of student eligibility identification, verification, and the logistics of maintaining the anonymity of participants, there is no difference in central administration or school-based functions. The Department of Agriculture annually sets the maximum family income for eligibility in the Free and Reduced Price Lunch and Breakfast Programs as a percentage of the poverty level. Between FY 1981 and FY 1982 the maximum income level for a free lunch for a child in a family of four was raised 7 percent ($720) to $10,990. With inflation raising most family incomes by 10 percent or more, the net effect of this action was to reduce the number of students eligible for a free meal. Consequently, 1,233 fewer students were eligible for a free meal in FY 1982 than in FY 1981. Approximately $180,000 of local funds would be required to increase the maximum income eligibility guidelines to the level necessary to return to the FY 1981 participation level.

Federal regulations require school districts to establish and monitor procedures whereby accurate records are maintained of those students who are eligible to receive free and reduced price meals. Schools provide an application form to an adult member of a child's family on which household income and family size are self-reported. When this family-furnished information meets stated eligibility criteria, the child is certified as eligible to receive lunch and/or breakfast (and milk) at free or reduced prices. Implementing and monitoring the Free and Reduced Price Meals Program imposes a heavy burden on the Division of Food Services. It is evident from the record-keeping problems posed by the program and the excessive amount of staff time required to maintain and update the program records that the burden needs to be alleviated. Tracking the status of applications is difficult and can be time consuming because of the existence of records at the schools and at the Food Services central office.

Recommendation

- The computer-supported application for the establishment, maintenance, and reporting of students eligible for free and reduced price lunch should be continued and completed as soon as possible. Such a system will make it possible to (1) enter and update the eligibility file from a remote terminal in the Division of Food Services, (2) update the eligibility file when students withdraw or transfer, and (3) update the eligibility file when federal income guidelines change.

CHAPTER 7

MANAGEMENT OF FREE AND REDUCED PRICE MEAL PROGRAM

Introduction

School districts participating in the National School Lunch and School Breakfast Programs which charge for meals separately from other fees are required by law to provide free and reduced price meals to any child who qualifies based on family income and size guidelines established by the Secretary of Agriculture. Montgomery County Public Schools participates in both of these programs and in FY 1981 served 1,689,964 free or reduced price lunches and 733,977 free or reduced price breakfasts. In FY 1981, for example, a child in a family of four whose family income is less than $10,270 could obtain a lunch at no cost, while a child from the same sized family whose income is less than $15,405 could obtain a lunch for 10 cents.[1] This chapter will focus on the identification of responsibilities for operating the free and reduced price lunch and breakfast program, procedures for monitoring application eligibility, income verification procedures, and additional problems posed by these programs.

Free and Reduced Price Lunch Program Responsibilities

Overall responsibilities for the normal delivery of services for the free and reduced price lunch program are identical to those previously described for the regular school lunch program. Except for the additional functions of student eligibility identification, verification, and the logistics of maintaining the anonymity of participants, there is no difference in central administration or school-based functions. Central administration responsibilities focus on development of Montgomery County program policies, based upon instructions received from the Maryland State Department of Education which in turn reflect federal policies and regulations. Field supervisors monitor the program as they make routine visits to schools.

Responsibilities of cafeteria managers and satellite workers involve taking tickets from children as they come through the lunch lines; checking to see if students are using tickets; checking to see whether children are getting all they are supposed to be getting; keeping children from misusing or selling tickets to others; and finding out how many free and reduced price lunches the secretary gave students money for, collecting this amount, and returning it to the secretary. Managers can obtain a count of the number of free and reduced price meal recipients for their school from the Central Office. Although they do not have direct responsibility for monitoring participation, they are responsible for knowing the number of students approved for free and reduced price lunches in their school and for advising the principal if overt discrimination occurs in free and reduced price sales at the point of sale.

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[1]The price for the reduced price lunch was raised to 20 cents February 1, 1981.

Free and Reduced Price Breakfast Program Responsibilities

Not all Montgomery County public schools participate in the breakfast program. Although Title I schools are required to participate in the breakfast program, in other schools principals are responsible for deciding whether or not to offer breakfast. When a principal wants to participate in the breakfast program, the Food Services central administrative staff reviews menus, prices, and the availability of the necessary equipment in the school and obtains the necessary Maryland State Department of Education approval for operating the breakfast program in that particular school. In addition, Food Services staff will assist schools in setting up the program and allocating the necessary staffing.

Field supervisors are responsible for monitoring the operations of the breakfast program to assure that schools are meeting the program requirements. Cafeteria managers/satellite workers have basically the same responsibilities as they have for the lunch program including serving a nutritious meal, maintaining necessary records, submitting required reports, and ordering foods. Some managers cook and serve breakfast without the help of additional cafeteria workers. It appears that each principal's level of involvement varies according to his or her individual preference.

Eligibility Criterion for Free and Reduced Price Meals

On July 1 of each year, the federal government sets a level of household/family income which becomes the standard for defining the poverty level used in a variety of federal programs. The Department of Agriculture annually sets the maximum family income for eligibility in the free and reduced price lunch and breakfast programs as a percentage of the poverty level. Consequently, the maximum income level for eligibility in the Free and Reduced Price Meal Programs can be modified by changing (or not changing) the income defined as the poverty level or by changing the percentage taken of the poverty level. Exhibit 7.1 shows the effect that changes in the maximum income level has on the number of students eligible to receive free and reduced price meals. Between FY 1981 and FY 1982, for example, the maximum income level for a free lunch for a child in a family of four was raised only $720 to $10,990 (7 percent). With inflation raising most family incomes by 10 percent or more, the net effect of this action was to reduce the number of students eligible for a free meal. Exhibit 7.1 shows that in FY 1982 1,233 fewer students were eligible for a free meal than in FY 1981. Approximately $180,000 of local funds would be required to increase the maximum income eligibility guidelines to the level necessary to return to the FY 1981 participation level.

Procedures for Student Eligibility

Federal regulations require school districts to establish and monitor procedures whereby accurate records are maintained of those students who are eligible to receive free and reduced price lunches and to insure that no

school serves more free and reduced price meals than the number of eligible students currently enrolled in that school. Schools provide an application form on which household income and family size are self-reported. When this family-furnished information meets stated eligibility criteria, the child is certified as eligible to receive lunch and/or breakfast (and milk) at free or reduced prices.

The primary responsibility for implementing these procedures is with the the central administrative staff of the Division of Food Services. They develop the eligibility application form and a letter to parents explaining all aspects of the program. The application form, letter to parents, and other public release material are sent to school principals in a memorandum explaining all responsibilities for processing applications. The Department of Information also sends out public releases explaining the program and notifying parents how to apply for the benefits of the program. The central administrative staff also handle the notification and other reporting requirements with the Maryland State Department of Education.

Building principals are responsible for distributing application forms to students to take home to their parents on or about the first day of school. Principals are also responsible for ensuring that all children eligible for the program have applied. Most of the schools surveyed (83 percent) said they used one of the following two procedures to notify parents that their children may be eligible to receive free or reduced price meals or free milk:

- o A notice given to student to take home to parents (99 percent)
- o School newsletter (34 percent)

Exhibit 7.1

EFFECT OF MAXIMUM INCOME LEVEL ON NUMBER STUDENTS
ELIGIBLE FOR FREE AND REDUCED PRICE MEALS
FY 1980 - FY 1982

	Maximum Income for* Free Lunch Eligibility		Number of** Students	Maximum Income for* Reduced Price Lunch Eligibility		Number of* Students Eligible
Year	Amount	As Percent of Proverty Level	Eligible for Free Meals	Amount	As Percent of Proverty Level	for Reduced Price Meals
FY 1980	$ 8,940	130%	7,243	$13,410	195%	3,372
FY 1981	10,270	130	8,704	15,405	195	3,792
FY 1982	10,990	125	7,471	16,265	185	3,776

*Department of Agriculture maximum income guidelines are based on family size. Data shown is for family of four.
**Number of approved applications on file as of October 1 of each year.

The Food Services central administrative staff are designated to receive all application forms, review and approve, maintain a current list of eligible children, and send notices to principals as to whether children who have applied are eligible to participate. Food Services reviews the number of applicants on file and contacts schools when there is a variance between free and reduced participation and eligibility and encourages schools to keep their list of eligible students current. Student withdrawals and transfers from each school must be monitored manually. Principals remind parents to send in new applications when necessary.

If the building principal questions a Division of Food Services eligibility decision, the principal must review the decision with Food Services prior to notifying parents as to their child's eligibility. Principals are also responsible for making sure "action taken" notices are on file for all children who made application for free or reduced price lunches and conversely that all children on the free and reduced price program eligibility file are being fed.

Mechanics of Operation in Schools

Principals are responsible for ensuring that eligible students in their school receive free and reduced price meals with complete anonymity. Cafeteria managers are charged with administering this and other aspects of the program within the school. Principals may select from the three collection procedures described below, the one which best fits their school's organization and administration.

Tickets - Students go to a designated area during the school day, daily or on a specified schedule, and receive ticket(s). All tickets are the same with a lettered numerical sequence. The A series indicates free, the B series reduced price, and C paid. Tickets are color coded, blue for the secondary lunch, yellow for the elementary lunch, and green for breakfast. Signs are posted in the schools advertising the location and sale of meal and milk tickets.

Cash - Schools with fewer than 10 free and reduced price students use an all cash system. The students eligible for free and reduced price meals go to a designated area during the school day and are given the money equal to a meal and extra milk (upon request). The cafeteria manager/worker or the principal monitor the cash system.

Collections in Classrooms - Teachers collect money. The free and reduced price students are added to the list of paying students. Either tickets are distributed to all children receiving a meal or the teacher monitors the students receiving the meal.

Observers in sample schools found all three procedures being used without standardization among type/level of school. For example, several violations of the ticket collection procedures were observed in elementary schools. The ticket procedures varied in how and when tickets were distributed to students eligible for free or reduced price meals. Examples of the cash and classroom collection procedures were also found in elementary schools. In junior and

senior high schools the cash and/or ticket collection procedures were observed to be the most widely used collection procedures.

In FY 1981, the Maryland State Department of Education conducted an audit of the MCPS free and reduced price lunch program in 25 schools. The audit reviewed in-school procedures for assuring anonymity and found all schools audited to be in full compliance with the established guidelines.

Income Level Verification

It was reported during the conduct of the study that income levels are not verified because federal regulations do not permit it. On an across the board basis that is true; however, local school officals may (and MCPS does), by law, "for cause" seek verification of self-reported household income and family size data as part of the current verification process. In cases where school officials have reason to believe that the information presented on applications is incorrect, existing regulations permit them to challenge the eligibility of the children in question through a "fair hearing procedure." Prior to initiating such a challenge, the school offical may request a conference with the parent to review the application form.

Program Monitoring

The program is monitored by the Food Services central administrative staff and the field supervisors. The accounting firm of Touche Ross and Company (the MCPS external auditor) reviews the records of student applications on file, the Government Accounting Office conducts reviews, and MCPS auditors examine the records. The State Department of Education reviews 25 percent of the schools annually. The state reviews are primarily adminsitrative reviews, while the auditing is conducted every two years. In addition, the federal government periodically audits the Food Services Program.

Problems Posed by the Program

Implementing and monitoring the free and reduced price meals program imposes a heavy burden on the Food Services Division. It is evident from the recordkeeping problems posed by the program and the excessive amount of staff time required to maintain and update the program records that the burden needs to be alleviated. Tracking the status of applications is difficult and can be time consuming because of the existence of records at the schools and at the Food Services central office. Degree of accuracy maintained is important for meeting state requirements such as numbers of children receiving free or reduced price meals must not exceed the number of applications on file. Preventing children from selling their meal tickets requires controls at the school level.

Implications of the Findings

The overall responsibilities for the administration of the free and reduced price lunch and breakfast programs seem to be well defined and accepted by those involved. The delivery of services to children receiving free or reduced price lunches is identical to the regular lunch program except for the in-school mechanics of maintaining anonymity. As was reported earlier, principals may select from the three established procedures for this purpose. Although it has been suggested that greater uniformity of use of these procedures among schools would make it easier to ensure compliance with the federal and state regulations, such steps would significantly limit the principals' ability to select the procedure they feel is best suited to their individual situation. The primary problem posed by the free and reduced price meal programs is the manual recordkeeping burden it imposes on both school and the Food Services central administrative staff. The increased federal emphasis on income verification and accountability of students eligible for and receiving free and reduced priced meals, coupled with heavy clerical burden caused by manual recordkeeping procedures, make this application maintenance task a prime candidate for computer support. It would appear both desirable and feasible to establish a computerized file of students who have applied and been approved for the free and reduced lunch program. It should be noted that the Department of Management Information and Computer Services has begun the design of an application which will provide the needed basic capabilities.

Recommendations

The recommendation for the improvement of the free and reduced price lunch program is:

- The computer-supported application for the establishment, maintenance, and reporting of students eligible for free and reduced price lunch should be continued and completed as soon as possible. Such a system will make it possible to (1) enter and update the eligibility file from a remote terminal in the Division of Food Services, (2) update the eligibility file when students withdraw or transfer, and (3) update the eligibility file when federal income guidelines change.

PART III

DELIVERY OF FOOD SERVICES

CHAPTER 8 SUMMARY

ATTITUDES TOWARD THE FOOD SERVICES PROGRAM

It has long been recognized that the perceptions and attitudes of students and parents toward the school lunch program will significantly influence their participation in the program. To examine feelings toward the lunch program, surveys were distributed to students, parents, teachers, principals and cafeteria workers. With a few exceptions, the overall attitude of parents was positive. The majority of parents responding to the survey indicated that (1) the lunch tasted good to their children, (2) their children liked most of the food served, and (3) the food is good for their children. Parents were not as positive about their children's enjoyment of the school lunch or the pleasantness of the lunchroom. Parents of secondary students had less positive feelings than parents of elementary students.

Students at the elementary level displayed positive attitudes toward the lunch program. There was a strong and consistent decline in positive attitudes as grade level increased. For instance, nearly 70 percent of the fourth graders agreed that the food tasted good most of the time. Less than 40 percent of the eleventh graders agreed with that statement.

Elementary teachers were significantly more positive about the school lunch program than were secondary teachers. Middle/junior high school teachers showed a slightly more positive attitude than did senior high teachers. The attitudes of the senior high teachers were very negative.

Principals generally had a positve attitude toward the school lunch program in their school. With a few exceptions, type of school did not make a difference in the principal's attitude toward the school lunch program. Principals in all types of schools felt strongly about the lack of variety in the meals. A third of the senior high principals said that students have to wait too long in line to get lunch.

An analysis of factors associated with positive attitudes showed that students and parents of students who bought the school lunch more frequently had more positive attitudes. Also, for teachers and principals the more frequently they ate the lunch, the more positive their attitudes. The more positive the principal felt about the school lunch program, the more likely he or she was to believe that students, parents and teachers saw the program positively.

Perceptions about changes needed in the school lunch program were obtained by asking students, parents, teachers, principals, and cafeteria staff to select from a list of possible changes the changes they would most like to see in their school lunch program. The findings were (1) "making the lunch taste better" was selected most often by students in all grades and also by parents, (2) school staff and parents selected "put more variety in the menu from day to day" significantly more often than did students, and (3) many teachers and parents selected "put more raw vegetables in the lunch", whereas students, principals, and cafeteria staff rarely selected it. Most groups, except cafeteria workers, selected the change "give students more food to choose from" relatively often. Senior high school students, parents of senior high

students, and cafeteria staff ranked "reduce the amount of time in line" very high, whereas this change was not often selected by the other groups.

Another approach to evaluating and thus improving attitudes toward the school lunch program is to determine food preferences of students and parents. The study found that parent food preferences for their children are significantly different from student preferences. As one might expect, parents consistently want their children to eat vegetables and fruits more frequently. Likewise, students consistently want to eat desserts and sweets more frequently than parents want them to have them. As grade increased, student food preferences came closer to the food preferences of parents. If one assumes that the parent food preferences reported in the study represent nutritious alternatives, then students' nutritional values are improving with grade.

Parents and students are in agreement that "I don't like the food" and "I'd rather bring a lunch" are the two primary reasons for not buying the school lunch. The cost of the lunch, preference for a la carte foods, and the wait in line were the next most frequently mentioned reasons by both students and parents. One-third of the eleventh grade students cited "waiting in line" as a reason for not buying the school lunch.

Nine multiple choice questions were developed to determine how much parents know about the school lunch program in MCPS. The results indicate that parents' knowledge of the Food Services Program is extremely limited.

Recommendations

- Continue to explore alternative innovative programs directed toward improving the acceptability of the Food Services Program particularly at the secondary level. Examples of alternative programs which could be investigated are (1) hot and cold sandwich combos which resemble the food offered in fast-food chains, (2) salad bars, and (3) alternative conventional lunches. Formally evaluate programs which are currently being piloted to determine their acceptability and transferability to other schools. These alternatives provide students with a variety of more desirable food items and can generally be served more efficiently, thus reducing the time spent in line.

- Investigate alternative lunch period arrangements, physical facilities, and staffing patterns which will decrease the time secondary students have to wait in line to be served. A school by school assessment should be made of the cafeteria's maximum capacity per lunch period and compared to the number of students scheduled per lunch period. Since Food Services administrators have no authority over school scheduling, implementation of this recommendation will have to be a cooperative effort with the area offices and school principals.

- Develop ongoing procedures for informing parents about the operation of the lunch program. Possible methods might be presentations before parent groups, information brochures, or articles for school newsletters.

CHAPTER 8

ATTITUDES TOWARD THE FOOD SERVICES PROGRAM

Introduction

It has long been recognized that the perceptions and attitudes of students and parents towards the school lunch program will significantly influence their participation in the program. Consequently, while previous chapters have addressed the management and delivery of food services, this chapter concentrates on the attitudes of students, parents, and staff toward the Food Services Program. The objectives of the chapter are to identify (1) positive and negative features of the program, (2) factors affecting attitudes towards school lunch, (3) suggested changes to the Food Services Program, (4) student and parent food preferences, (5) perceived alternatives to eating the school lunch, and (6) parent knowledge of the school lunch program. The information reported in this chapter was collected through surveys which were distributed in February and March, 1981. Survey data comparing on-site and satellite schools will be presented in Chapter 11.

Attitudes of Parents

Exhibits 8.1 and 8.2 show the percentage of parents (by grade of their children) that responded "agree" or "agree very much" to a series of statements about aspects of the Food Services Program. Some of the statements were written in a positive direction (Exhibit 8.1) which meant that agreement with the statement indicated a positive attitude toward the program. Other statements were negative (Exhibit 8.2) and for these statements disagreement with the statement reflected a positive feeling about the program. With a few exceptions, the overall attitude of parents was found to be positive. The parents of the elementary students were generally more positive in their feelings about the lunch program than the parents of secondary students. The significant findings were the following:

- The majority of parents felt that the food served in the school lunch program tasted good. Over 60 percent of the parents in all three grade groups agreed with the statement "the food tastes good to my child most of the time," with little difference by grade.

- Responses to the statement "My child likes most of the food served" were very similar to the responses to the statement concerning the taste of the food. With little difference by grade, the majority of the parents responding (60 percent) agreed with the statement.

- Parents' agreement with the statement "The food is good for my child" was even stronger than the previous two statements. Nearly 80 percent of all parents agreed, with no significant variation by grade of their children.

Exhibit 8.1

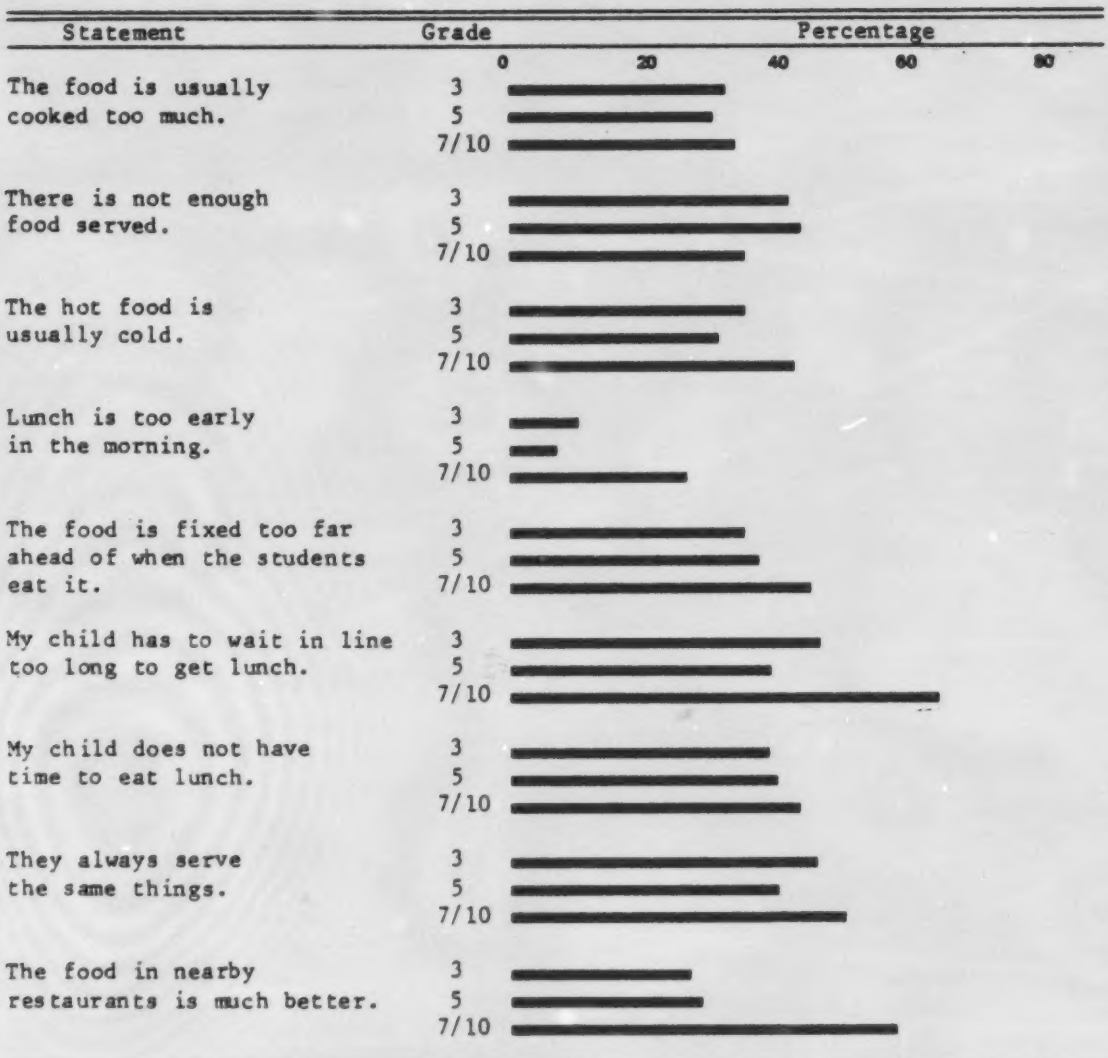
PARENTS' RESPONSES TO POSITIVELY-WORDED STATEMENTS ABOUT THE SCHOOL LUNCH*

Statement	Grade	Percentage
		0 20 40 60 80
The food tastes good to my child most of the time.	3	
	5	
	7/10	
My child likes most of the food served.	3	
	5	
	7/10	
The food is good for for my child.	3	
	5	
	7/10	
My child enjoys getting the school lunch.	3	
	5	
	7/10	
The people who work in the cafeteria are nice.	3	
	5	
	7/10	
The lunchroom is a pleasant place to eat.	3	
	5	
	7/10	
The food usually looks good.	3	
	5	
	7/10	

*Percentage of parents who checked "agree" or "agree very much" for each statement.

Exhibit 8.2

PARENTS' RESPONSES TO NEGATIVELY-WORDED STATEMENTS ABOUT THE SCHOOL LUNCH*



*The percentage of parents who checked "agree" or "agree very much" for each statement.

- Parents were divided in their feelings about the statement "My child enjoys getting the school lunch." Only for the third grade did more than 60 percent of the parents agree with this statement.

- At least 80 percent of the parents in all three grade groups agreed that the people in the cafeteria were nice.

- Parents' attitude toward the pleasantness of the lunch room as a place to eat was not as positive as toward other aspects of the school lunch program. Approximately half of the parents agreed or strongly agreed with the statement that "The lunchroom is a pleasant place to eat."

- A grade difference was detected for parents in their agreement with the statement that "The food usually looks good." The percentage of parents agreeing to the statement declined from 70 percent for third grade to 50 percent for the combined response from parents of seventh and tenth graders.

- A majority of the parents did not believe that the food was cooked too much, that there was not enough served, that the hot food was cold or that students do not have enough time to eat lunch.

- Over 60 percent of the parents of children in the grade 7/10 group "agreed" or "strongly agreed" with the statement "My child has to wait in line too long to get lunch."

- Fifty-eight percent of the parents of children in the 7/10 grade group were in agreement with the statement that "The food in nearby restaurants is much better" while only about a third of the parents of the younger students were in agreement.

- An examination of all of the statements revealed a grade level trend. The parents of the secondary students were generally less positive in their feelings about the Food Services Program than parents of the elementary school students.

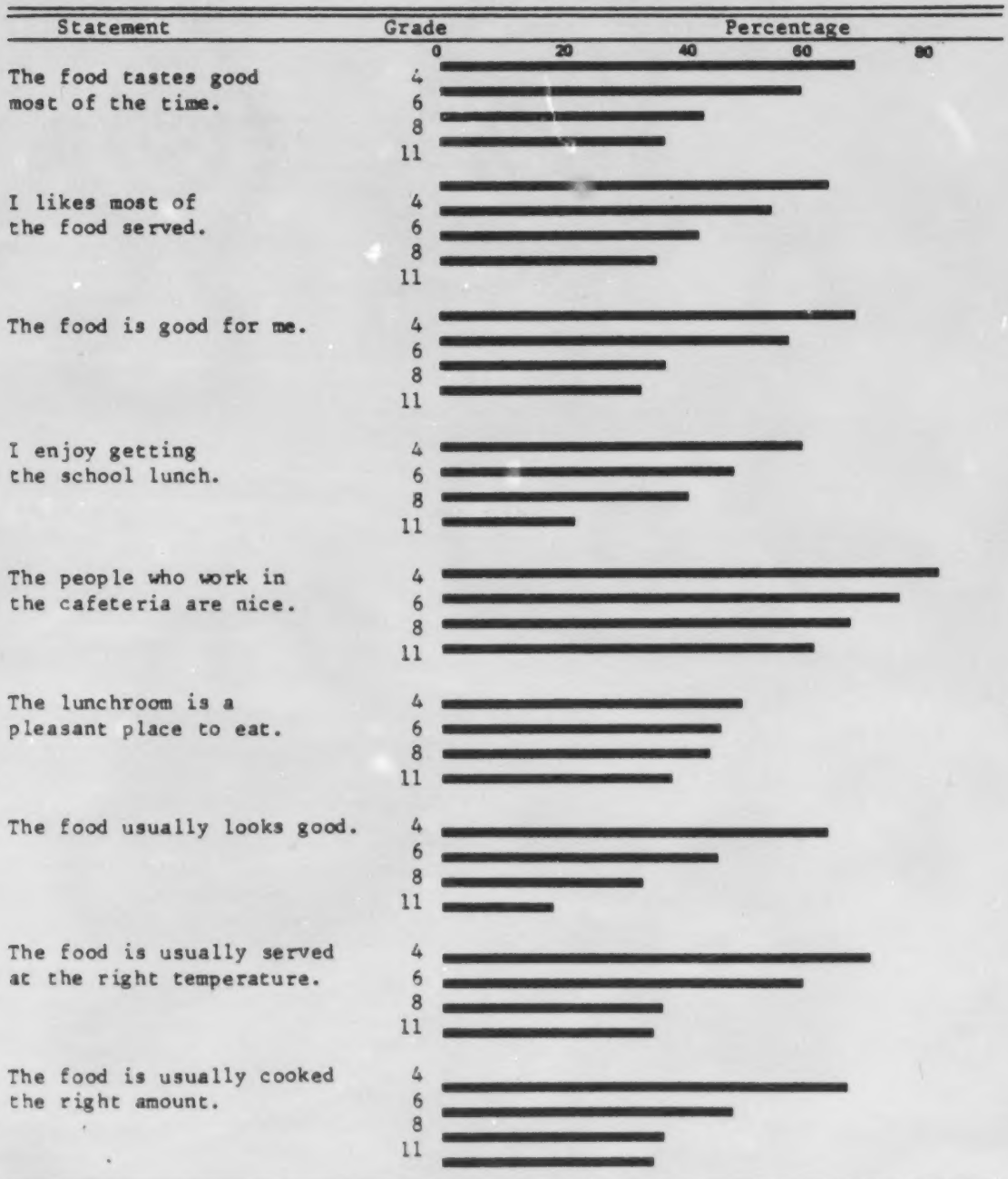
Attitudes of Students

Exhibits 8.3 and 8.4 visually show the percentage of students (by grade) that responded "agree" or "agree very much" to a series of statements about the Food Services Program. The most significant finding is a strong and consistent decrease in the positive attitudes of students as grade level increases. The lessening of positive attitude with increasing grade was observed with nearly all statements. The overall attitude of elementary school students to the school lunch program was positive. The attitudes of secondary school students to the school lunch, however, were not positive. Other significant findings are the following:

- Sixty-eight percent of the fourth grade students agreed that "the food tastes good most of the time." This figure declined with each increasing grade with less than 40 percent of the eleventh graders agreeing with the statement.

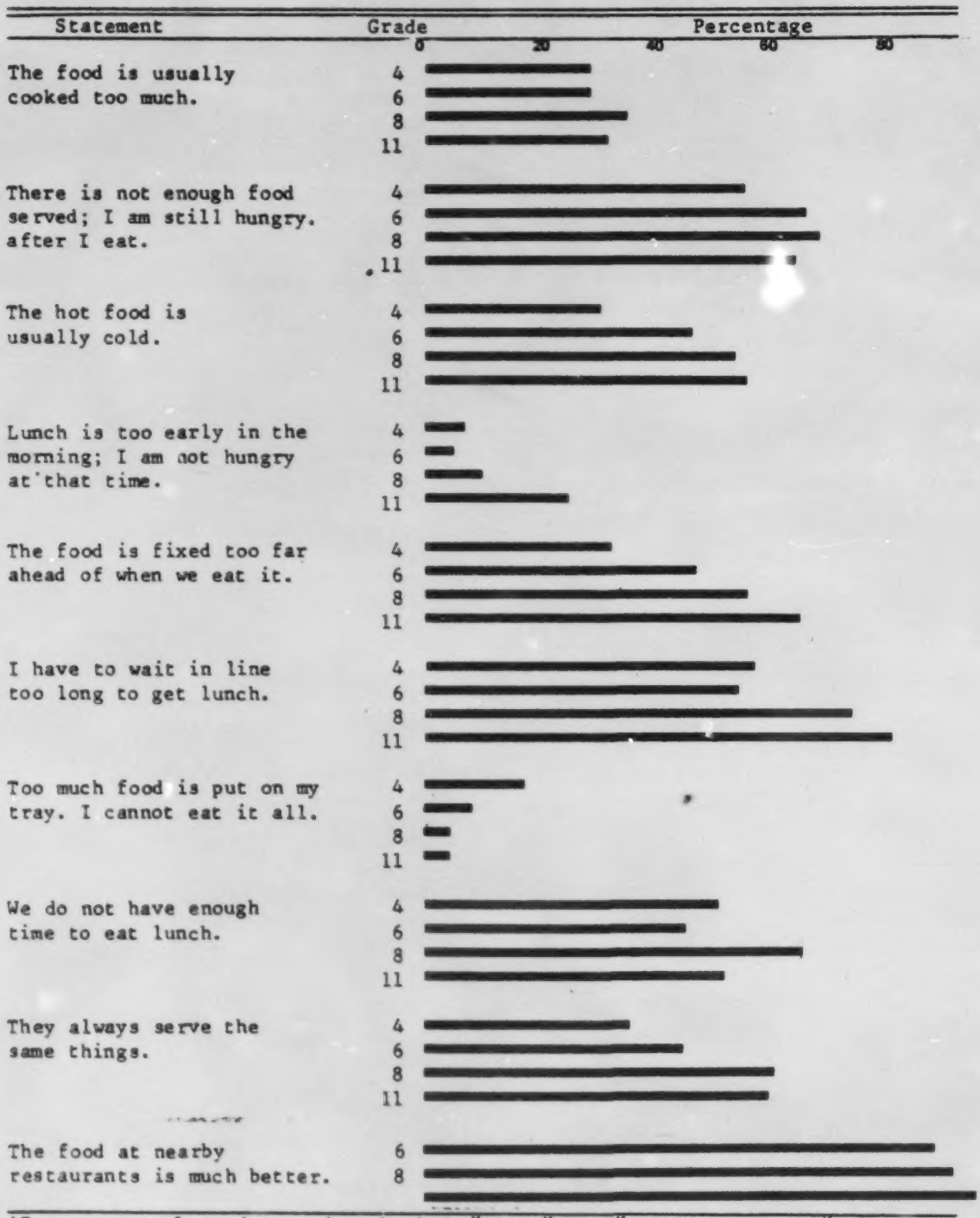
Exhibit 8.3

STUDENTS' RESPONSES TO POSITIVELY-WORDED STATEMENTS ABOUT THE SCHOOL LUNCH*



*Percentage of students who checked "agree" or "agree very much" for each statement.

Exhibit 8.4

STUDENTS' RESPONSES TO NEGATIVELY-WORDED STATEMENTS ABOUT THE SCHOOL LUNCH*

*Percentage of students who checked "agree" or "agree very much" for each statement.

- Approximately 90 percent of the students (grades 6, 8, and 11) agreed with the statement "The food at nearby restaurants is much better."

- Student responses by grade to the statement "I like most of the food served" were identical to their responses to the statement concerning taste. Although over 64 percent of fourth grade students indicated they like most of the food served, only 30 percent of the eleventh graders indicated the same.

- Sixty-eight percent of the fourth graders agreed the food was good for them, while less than half of that percentage (32 percent) of eleventh graders agreed with the same statement.

- Only 22 percent of the eleventh graders agreed with the statement "I enjoy getting the school lunch," while 60 percent of the fourth graders indicated they enjoyed the school lunch.

- Although there was a relationship with grade, students were in strong agreement with the statement "The people who work in the cafeteria are nice." Over 60 percent of the eleventh grade and over 80 percent of the fourth grade students agreed with the statement.

- Approximately half of the students agreed or strongly agreed with the statement that "The lunchroom is a pleasant place to eat." A slight variation by grade was noticed for students (less positive for secondary students).

- A grade difference was again detected for student agreement to the statement that "The food usually looks good." While over 60 percent of the fourth grade students agreed or strongly agreed with this statement, less than 20 percent of the eleventh graders did the same.

- Once again elementary students demonstrated more positive attitudes toward the food served than did secondary students as agreement with the statement "The food is usually served at the right temperature" declined from a high of 70 percent for fourth graders to a low of 38 percent for eleventh graders.

- Student agreement to the statement "The food is usually cooked the right amount" was identical to agreement described above for temperature of the food.

- Students did not feel that lunch is too early in the day. Only 20 percent of the eleventh graders indicated that lunch was served too early and this was the largest percentage for any of the grade levels.

- While only 30 percent of the fourth graders agreed with the statement that "The food is fixed too far ahead of when we eat it," over 65 percent of the eleventh grade students agreed with the statement.

- Over half of all students and 80 percent of eleventh graders indicated that they have to wait too long to get lunch.

- Approximately half of the students agreed with the statement "We do not have enough time to eat lunch."

- Secondary students felt more strongly than elementary students that "They always serve the same things." Over 60 percent of the secondary students agreed with the above statement.

Attitudes of Teachers

Overall, elementary teachers were substantially more positive about the school lunch program than were secondary teachers. Middle/junior high school teachers showed a slightly more positive attitude than did senior high teachers. For all statements, the majority of the senior high teachers disagreed--regardless of whether the statement was worded postively or negatively.

Exhibits 8.5 and 8.6 indicate the percentages of teachers who checked "strongly agree" or "agree" for each of the positively- or negatively-worded statements about the school lunch program in their schools. Forty-three percent of elementary teachers felt the food tastes good most of the time, whereas fewer than 20 percent of secondary teachers agreed with that statement. Thirty-eight percent of elementary teachers felt the meals are nutritious and well-balanced, 50 percent felt the people who work in the cafeteria are nice to the students, 43 percent felt the food usually looks good, 45 percent said the food is usually served at the right temperature, and 43 percent felt the food is usually cooked the right amount. Fewer than 20 percent of teachers at each of the other levels expressed positive attitudes toward these aspects of food services.

Fewer than 15 percent of teachers at all levels felt the food is usually cooked too much, that the cold food is usually cold, that lunch is served too early in the morning, that the food is fixed too far ahead of when students eat it, that students have to wait in line too long to get the lunch, that students do not have enough time to eat lunch, and that students have trouble getting the school lunch to their table. Twenty-one percent of elementary, 12 percent of junior/middle, 7 percent of high school, and 6 percent of special school teachers said the cafeteria always serves the same things.

Attitudes of Principals Towards the School Lunch

Overall, principals had a very positive attitude toward the school lunch program in their schools. Ninety-one percent of all principals surveyed agreed that the food tastes good most of the time, 84 percent indicated that students like most of the food served, and 86 percent thought meals to be nutritious and well-balanced. Exhibits 8.7 and 8.8 indicate the percentage of principals (by type of school) who checked "agree very much" or "agree" for each of the statements. With a few exceptions, type of school did not make a difference in principal's attitudes toward the school lunch program. As measured by the statements "the food tastes good," "students like the meals," and "students enjoy getting the lunch," principals from secondary schools are slightly more positive than elementary principals.

Exhibit 8.5

TEACHERS' RESPONSES TO POSITIVELY-WORDED STATEMENTS ABOUT THE SCHOOL LUNCH*

Statement	Percentage			
	Elementary	Junior/ Middle	Senior	Special
The food tastes good most of the time.	43	18	10	6
Students like most of the food served.	38	14	4	5
The meals are nutritious and well-balanced.	41	15	9	7
Students enjoy getting the lunch.	45	12	4	7
The people who work in the cafeteria are nice to the students.	50	18	10	8
The cafeteria is a pleasant place to eat.	30	13	5	5
The food usually looks good.	43	18	8	6
The food is usually served at the right temperature.	45	19	8	6
The food is usually cooked the right amount.	43	15	7	5

*Percentage of teachers who checked "agree" or "agree very much" for each statement.

Exhibit 8.6

TEACHERS' RESPONSES TO NEGATIVELY-WORDED STATEMENTS ABOUT THE SCHOOL LUNCH*

Statement	Percentage			
	Elementary	Junior/ Middle	Senior	Special
The food is usually cooked too much.	12	8	5	3
There is not enough food served.	16	9	5	5
The hot food is usually cold.	6	3	3	3
Lunch is served too early in the morning; some students are not hungry.	2	6	2	0
The food is fixed too far ahead of when students eat it.	8	5	3	3
Students have to wait in line too long to get the lunch.	9	9	10	2
The portions are too large.	1	0	1	0
Students do not have enough time to eat lunch.	6	8	6	1
They always serve the same things.	21	12	7	6
The students have trouble getting the school lunch to their tables.	7	2	1	2

*Percentage of teachers who checked "agree" or "agree very much" for each statement.

Exhibit 8.7

PRINCIPALS' RESPONSES TO POSITVELY-WORDED STATEMENTS ABOUT THE SCHOOL LUNCH*

Statement	Percentage			
	Elementary	Junior/ Middle	Senior	Special
The food tastes good most of the time.	87	100	100	100
Students like most of the food served.	79	100	83	100
The meals are nutritious and well balanced.	91	80	67	80
Students enjoy getting the lunch.	75	91	100	100
The people who work in the cafeteria are nice to the students.	92	75	100	100
The cafeteria is a pleasant place to eat.	58	75	80	75
The food usually looks good.	85	82	83	80
The food is usually served at the right temperature.	96	83	100	100
The food is usually cooked the right amount.	96	90	83	80

*Percentage of principals who checked "agree" or "agree very much" for each statement.

Exhibit 8.8

PRINCIPALS' RESPONSES TO NEGATIVELY-WORDED STATEMENTS ABOUT THE SCHOOL LUNCH*

Statement	Percentage			
	Elementary	Junior/ Middle	Senior	Special
The food is usually cooked too much.	9	9	17	20
There is not enough food served.	19	17	33	40
The hot food is usually cold.	2	10	0	0
Lunch is served too early in the morning: some students are not hungry.	2	27	0	0
The food is fixed too far ahead of when students eat it.	6	8	0	0
Students have to wait in line too long to get the lunch.	17	0	33	20
The portions are too large.	6	17	0	0
Students do not have enough time to eat lunch	6	18	0	0
They always serve the same things.	30	33	50	40
The students have trouble getting the school lunch to their tables.	8	8	0	0

*Percentage of principals who checked "agree" or "agree very much" for each statement.

Very few principals agreed with the negatively-worded statements. Principals in all types of schools felt most strongly about the lack of variety of meals but even for this issue, only a minority saw it as a problem. Half (50 percent) of senior high principals and a third of elementary (30 percent) and junior high (33 percent) principals agreed with the statement "They always serve the same things." A third of the senior high principals (33 percent) said that students have to wait too long in line to eat lunch.

Attitudes of Cafeteria Personnel

As Chapter 4 reported very high job satisfaction for cafeteria personnel, it is not surprising that they also indicated positive attitudes toward the Food Services Program. Exhibit 8.9 expresses the percentage of each group of cafeteria staff that checked "agree very much" or "agree" with each of the indicated statements. The vast majority of managers and satellite workers felt that the field supervisor understood their problems and helped them do a better job. A majority of managers and cafeteria workers indicated that they could do a better job if they knew more about nutrition, food preparation, and federal and state regulations. Satellite workers, on the other hand, did not feel that additional knowledge in these three areas would allow them to do a better job.

Although the vast majority of cafeteria personnel (95 percent, 89 percent, and 82 percent of managers, cafeteria workers, and satellite workers) thought students would complain no matter what, they all (100 percent, 88 percent, and 100 percent, respectively) enjoyed working with students. Sixty-eight percent of cafeteria managers and 50 percent of cafeteria workers agreed with the statement that "teachers are too critical and/or demanding of the school lunch program," while only 30 percent of satellite workers agreed with this statement. A quarter or less of the staff in each of these three groups felt that parents were too critical or demanding.

Factors Affecting Attitudes Toward School Lunch

A general examination was conducted to see which, if any, factors were related to the attitude of different groups toward the school lunch. "Attitude" was a score calculated for each respondent by adding points for each statement on the attitude page. Points were assigned as follows:

	Positive Statements	Negative Statements
Agreed Very Much	+2	-2
Agreed	+1	-1
Not Sure	0	0
Disagree	-1	+1
Disagree Very Much	-2	+2

Scores ranged from +40 to -40 (very positive to very negative). Correlations were calculated between the attitude score and various other items on the questionnaire. The results of this aspect of the study are described below for various respondent groups.

Exhibit 8.9

ATTITUDES OF CAFETERIA PERSONNEL TOWARD THE FOOD SERVICE PROGRAM*

Statement	Percentage		
	Cafeteria Managers	Cafeteria Workers	Satellite Workers
MCPS Food Services is well managed.	91	73	83
I could do a better job if I knew more about nutrition.	59	54	10
I could do a better job if I knew more about food preparation.	48	50	9
I could do a better job if I knew more about the federal and state regulations that apply to the school lunch and breakfast program.	56	49	20
The field supervisor for this school understands the problems here.	86	68	82
My field supervisor has helped me to do a better job.	89	63	82
My performance evaluations have been fair.	93	90	95
I have learned something from my performance evaluations.	93	81	78
Students will always complain no matter what.	95	89	82
I enjoy working with the students in this school.	100	88	100
Teachers are too critical and/or demanding of the school lunch program.	68	50	30
Parents are too critical and/or demanding of the school lunch program.	22	17	27

*Percentage who checked "agree very much" or "agree" for each statement.

Students

Exhibit 8.10 shows the relationship between various factors and a student's attitude toward the school lunch. A positive correlation coefficient indicates that the factor has a direct relationship with attitude, while a negative correlation coefficient indicates an inverse relationship. The higher the correlation coefficient (closer to 1) the stronger the relationship. The data indicates that:

- Student attitude toward the school lunch becomes more negative as student grade increases. The relationship between attitude and grade level was stronger than attitude's relationship with any other factor.
- Students who ate the lunch more frequently had more positive attitudes toward it.
- Students with the most positive attitude were more likely to be willing to help cafeteria staff plan the menu.

Parents

The results of the search for factors relating to parents' attitudes toward the school lunch are shown in Exhibit 8.11. A summary of these findings shows that:

- Parents of children in lower grades were more likely to have positive attitudes than parents of children in higher grades.
- Parents of children who buy lunch more often had more positive attitudes.
- Parents who thought parents should be involved in planning the lunch program were more likely to have negative attitudes.
- Parents who had eaten in the school cafeteria had more positive attitudes. (Twenty-eight percent of the parents had eaten in the cafeteria.)

Principals

The analysis of factors related to principals' attitudes toward the school lunch showed a number of correlations (see Exhibit 8.12) specifically:

- The more frequently a principal ate the school lunch, the more positive his or her attitude.
- Principals with the more negative attitudes were more likely to think it was important for elementary school students to have a choice of food for lunch.
- Principals who received comments or complaints from students, parents, and teachers less frequently had more positive attitudes.

Exhibit 8.10

RELATIONSHIP BETWEEN STUDENT ATTITUDE
TOWARD THE SCHOOL LUNCH AND OTHER FACTORS

Factor	Correlation Coefficient	Level of Significance (p)	n
Grade	-.39	.0001	2281
Sex	-.02	-	2280
Times per week get lunch	.24	.0001	2271
Any lessons about food or nutrition this year or last (1=Yes, 2=No)	.03	.05	2253
Like to help people in cafeteria plan lunches (1=Yes, 2=No)	-.18	.0001	2259
Ever been in a taste test (1=Yes,2=No)	-.08	.0001	2087

Note: Due to the large sample size, even minimal relationships were statistically significant.

Exhibit 8.11

RELATIONSHIP BETWEEN PARENT ATTITUDE
TOWARD THE SCHOOL LUNCH AND OTHER FACTORS

Factor	Correlation Coefficient	Level of Significance (p)	n
Grade	-.12	.01	351
Times per week buys lunch	.31	.0001	353
Importance of choice at			
elementary level	-.05	-	341
junior/middle level	.05	-	325
high school level	.05	-	317
Should parents be involved in lunch program? (1=Yes, 2=No)	.10	.03	340
Ever volunteered in school cafeteria? (1=Never; 2=1-3 times ; 3=4 or more)	.01	-	357
Ever eaten lunch or breakfast? (1=Never; 2=1-3; 3=4 or more)	.15	.003	355

- Principals with positive attitudes were more likely to perceive students, parents, and teachers as being positive about the lunch program.

- Principals with negative attitudes were more likely to see students and parents as desiring more involvement with the school lunch program.

Teachers

Exhibit 8.13 shows analysis of data for factors that affect teacher attitudes toward both the school lunch that they eat and their attitudes toward the lunch of students. Very few significant relationships were found. Specific findings were the following:

- Elementary level teachers had more positive attitudes toward their lunch and their students' lunch.

- Teachers who eat the school lunch more frequently had more positive attitudes.

Changes Needed in School Lunch Program

Perceptions about needed changes in the school lunch program were obtained by asking students, parents, principals, teachers, and cafeteria staff to select from a list of 23 possible changes, up to four changes they would recommend in the school lunch program. Exhibit 8.14 shows the most frequently selected changes for each respondent group. For example, "making the food taste better" was the change most frequently suggested by sixth grade students. The following findings can be drawn from the summary data displayed in Exhibit 8.14

Food Related Changes

- "Making the lunch taste better" was the change most frequently selected by students in all three grade levels and also by all three groups of parents. Although teachers selected this change frequently (third most frequent), principals and cafeteria staff did not see it as a needed change (tenth and sixteenth, respectively).

- School staff (principals, teachers, and cafeteria staff) and elementary parents saw a need to "put more variety in menu from day to day" whereas students and secondary parents felt other changes were more necessary.

- The desire for more fresh fruits and raw vegetables in the lunch program was frequently expressed by parents and teachers. "More fresh fruits" was not selected very frequently by students or cafeteria staff and very few students or cafeteria staff wanted more raw vegetables.

- Most groups with the exception of cafeteria staff saw a need to give students more food to choose from. Parents of elementary students and principals felt particularly strong about this issue; it was one of their most frequently selected changes.

Exhibit 8.12

RELATIONSHIP BETWEEN PRINCIPAL ATTITUDE
TOWARD THE SCHOOL LUNCH AND OTHER FACTORS

Factor	Correlation Coefficient	Level of Significance (p)	n
Sex	-.12	-	75
Times eat lunch	.41	.001	75
Level	-.08	-	67
Importance of choice of foods (1=Very important; 5=Not at all)			
elementary	.31	.003	73
junior/middle	.18	.07	69
high school	.04	-	66
Frequency with which comments, complaints received from (1=All the time; 4=Rarely)			
students	.39	.001	74
parents	.22	.03	74
teachers	.19	.06	75
Principals perception of how other groups feel about lunch program (1=Very positive; 5=Very negative)			
students	-.46	.001	75
parents	-.53	.001	67
teachers	-.52	.001	74
Principals perception of desire for greater involvement on part of (1=Yes, much; 3=No)			
students	.26	.01	75
parents	.32	.005	66
teachers	.01	-	71

Exhibit 8.13

RELATIONSHIP BETWEEN TEACHER ATTITUDE
TOWARD THE SCHOOL LUNCH AND OTHER FACTORS

Factor	Correlation Coefficient	Level of Significance (p)	n
Teachers--Attitude Toward Lunch of Teachers			
Sex	-.03	-	515
Level	-.21	.001	520
Frequency of lunch purchase	.33	.001	514
Importance of choice for			
elementary	.05	-	483
middle/junior	.06	-	463
senior high	.05	-	455
Teacher's Attitudes Toward Lunch of Students			
Sex	.02	-	525
Level	-.17	-	529
Frequency of lunch purchase	.27	-	524
Importance of choice for			
elementary	.02	-	501
middle/junior	.05	-	473
senior high	-.00	-	463

Exhibit 8.14

CHANGES NEEDED IN LUNCH PROGRAM
AS SEEN BY DIFFERENT GROUPS*

Change Recommended	Students			Parents			Principals	Teachers	Cafeteria Staff
	6	8	11	3	5	7/10			
Food Related Changes									
Make the food taste better	(1)	(1)	(1)	(1)	(1)	(1)	10	(3)	16
Put more variety in the menu from day to day	8	6	8	(3)	(4)	9	(1)	(2)	(3)
Put more fresh fruit in the lunch program	11	11	11	(4)	(5)	(4)	7	(5)	12
Put more raw vegetables in the lunch program	18	19	19	(5)	6	8	14	(4)	19
Give the students more foods to choose from	(5)	7	9	(2)	(3)	6	(3)	7	13
Make the food look better	9	10	10	18	17	16	15	19	14
Serve fewer starchy foods	21	21	13	9	9	15	6	(1)	9
Reduce the quantity of fats in the lunch	15	15	18	10	13	14	18	15	10
Reduce the amount of calories in the lunch	19	18	20	20	19	21	12	12	18
Delivery Related Changes									
Make the lunch period longer	6	(2)	(4)	7	8	(5)	20	6	20
Reduce the amount of time in line	10	9	(2)	13	12	(3)	9	9	(1)
Make the dining room a more attractive place	17	20	17	17	18	20	(5)	17	(5)

*Table entries are the rank ordering of the changes based on the frequency with which they were selected with 1 being the most frequently selected change by that group.

Top five for a group included in ( ).

Exhibit 8.14 (Cont'd.)

Change Recommended	Students 6	Students 8	Students 11	Parents 3	Parents 5	Parents 7/10	Principals	Teachers	Cafeteria Staff
Clean the dining area more often or more thoroughly	14	13	15	19	20	18	19	20	17
Make the dining area a quieter place to eat	16	17	21	12	16	17	11	10	(4)
Make the atmosphere in the dining area more pleasant	20	16	12	15	15	12	(4)	13	6
Serve larger portions	(3)	(4)	(3)	14	10	10	8	8	(2)
Serve smaller portions	23	23	23	21	23	23	21	22	22
Make sure the hot food is served hot	7	8	(5)	6	(2)	(2)	13	11	8
Serve "seconds" on request	(4)	(5)	7	8	7	11	(2)	16	7
Serve lunch later in the day	22	22	16	22	22	19	22	21	23
Serve lunch earlier in the day	12	12	22	23	21	22	23	23	21
Reduce the price of the lunch	(2)	(3)	6	16	11	7	17	18	15
Other	13	14	14	11	14	13	16	14	11

*Table entries are the rank ordering of the changes based on the frequency with which they were selected with 1 being the most frequently selected change by that group.

Top five for a group included in ( ).

- Improving the appearance of the food was not seen as important relative to the other changes by any of the groups.

- Teachers saw a need to "serve fewer starchy foods" selecting this change more often than any other. Principals also saw this as somewhat important whereas it was not important for any other group.

- None of the groups saw a need to reduce the quantity of fats or calories in the lunch.

Delivery Related Changes

- Students, parents and teachers felt that the lunch period needed to be made longer. For the secondary students and parents of secondary students, this was one of the most frequently selected changes.

- Similarly, senior high students, parents of secondary students, and cafeteria staff felt that reducing the time in line was a needed change whereas the other groups did not see this as a problem.

- The physical condition of the dining room (attractiveness, cleanliness, and sound level) did not appear to be of particular concern to any group with the exception of cafeteria staff. This latter group selected the suggested changes of "Make the dining room area a quieter place to eat" and "Make the dining room a more attractive place" fourth and fifth most frequently, respectively.

- A need to serve larger portions was seen by students from all three grade levels and by the cafeteria staff. For these groups, it was one of the most frequently suggested changes. This was not an issue for parents, principals or teachers. None of these groups saw a need for smaller portions.

- The students' desire for more food was also seen in their frequent selection of "serve seconds" on request as a needed change in the lunch program. Principals also felt strongly that students should be served seconds.

- All respondent groups rarely selected either of the two changes associated with moving the serving time for lunch (either earlier or later).

- All three groups of students selected "Reduce the price of lunch" more often (second, third, and sixth most frequently selected change.) than all other groups did.

Appendix E contains bar graphs showing the percentage of students and parents (by grade) and teachers, cafeteria staff and principals who indicated each suggested change in the school lunch program.

Student and Parent Food Preferences

Another approach to evaluating and thus improving attitudes toward the school lunch program is to determine food preferences of students and parents. Exhibit 8.15 displays data as to the number of times per month students (by grade) would like to eat individual food items either in or out of school. For parents, the data is in response to the number of times per month they would like their child to eat the food item. Response choices to this question were 0, 1-2, 3-4, 5-10, 11-30, or more than 30 times per month. The exhibit shows the median response for each food item for each grade of students and for parents as a single group. There was little difference in preferences of parents of students from different grade levels.

Parent food preferences for their children were significantly different from student preferences. Parents and students agreed in the preference (times per month) for only 8 of the 37 (22 percent) food items. As one might expect, parents consistently wanted their children to eat vegetables and fruits more frequently. Likewise, students consistently wanted to eat desserts and sweets more frequently than parents wanted them to have them. Parent and student food preferences came closest for the bread and meat/protein food categories.

As grade increased, student food preferences came closer to the food preferences of parents. For example, parents median preference for whole milk was close to the 11-30 times per month response, while eleventh graders were 5-10, fifth graders 4-5, sixth graders 3, and fourth graders 0-1. This grade sequence trend towards parents occurred for 24 of the 37 (65 percent) food items. The relationship was found in all food component categories. For many foods, the parent food preferences reported in the study represent a more nutritious diet, in which case students' nutritional values are improving with grade. However, for some food, i.e., pizza and tacos, the parents expressed a preference for less frequent consumption although these are nutritious foods. Possibly their image as "fast food" had led parents to see them as undesirable.

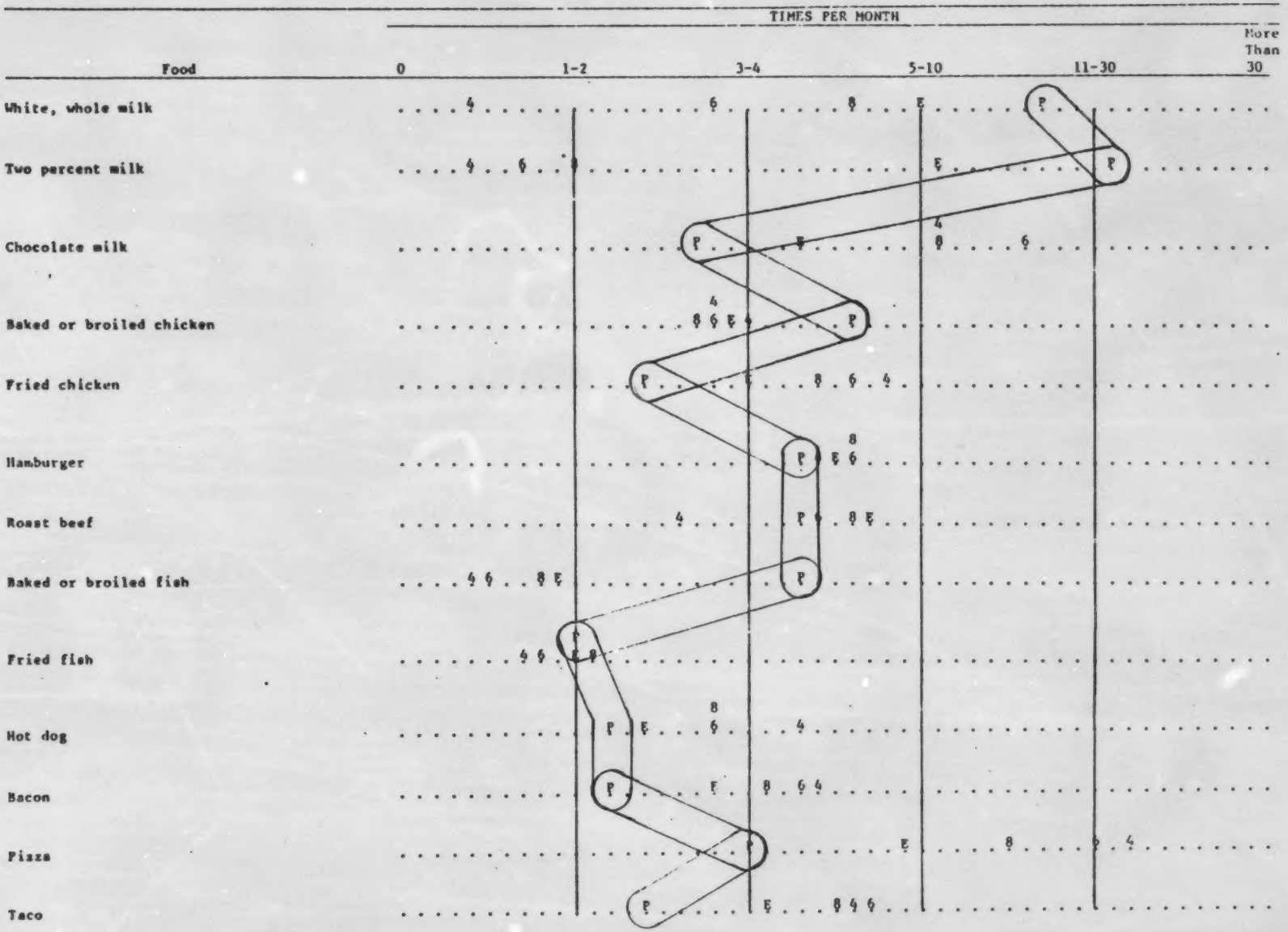
General food preference agreement among parents and students were shown for the following food items

Food item	Times per month
Baked or broiled chicken	3-4 (Parents slightly higher)
Hamburger	4-7
Roast beef	4-7
Fried fish	1-2
Frozen pot pie	1
Corn	4-7
Mashed Potatoes	4-7
White bread	4-7
Noodle package mix	2-3
Canned peaches	3-4
Diet soda	0-1

In addition, parents showed a preference for baked or broiled food while students indicated a greater preference for the same items fried, i.e., chicken and fish.

Exhibit 8.15

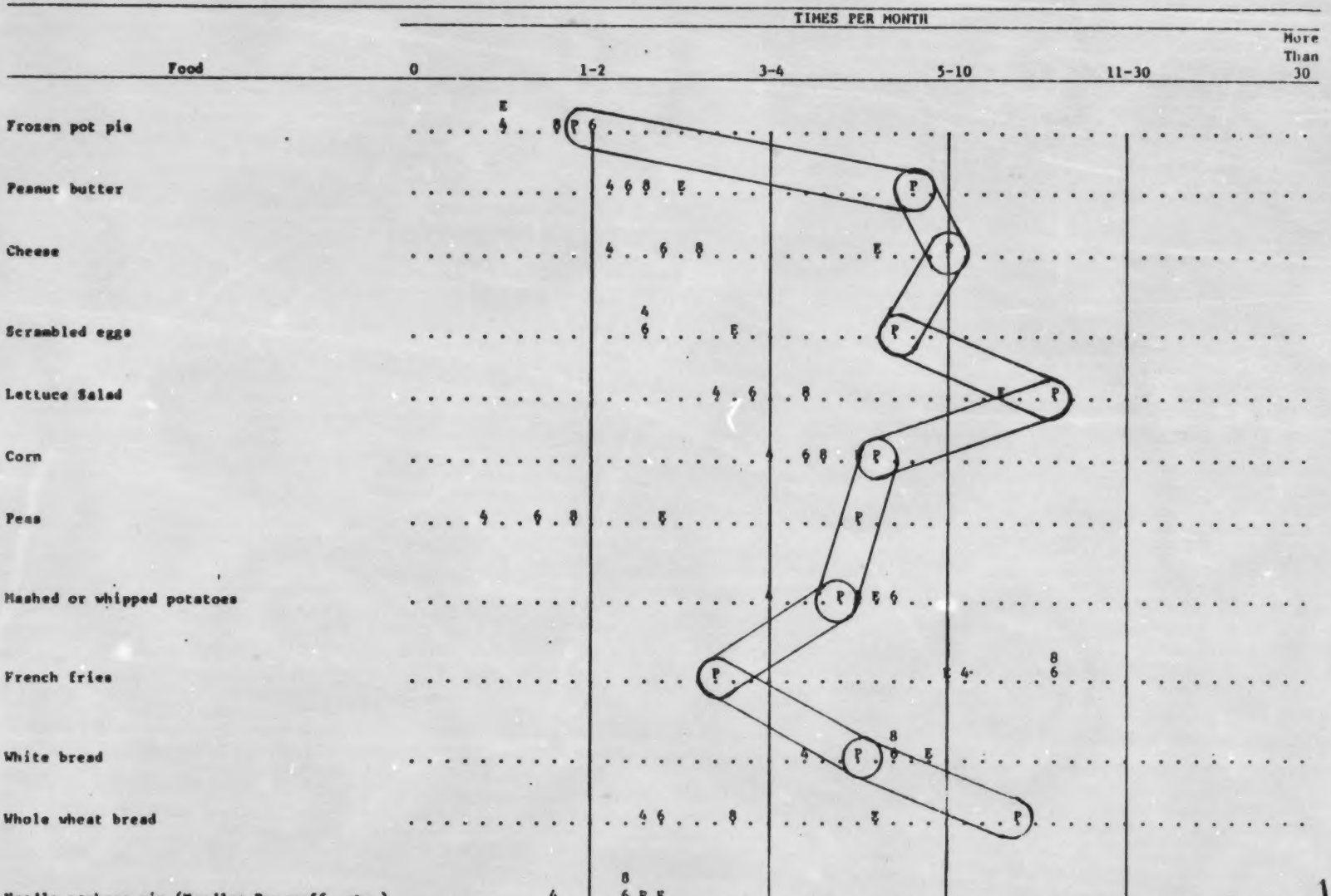
FOOD PREFERENCE OF STUDENTS AND PARENTS



8.21

Exhibit 8.15 continued

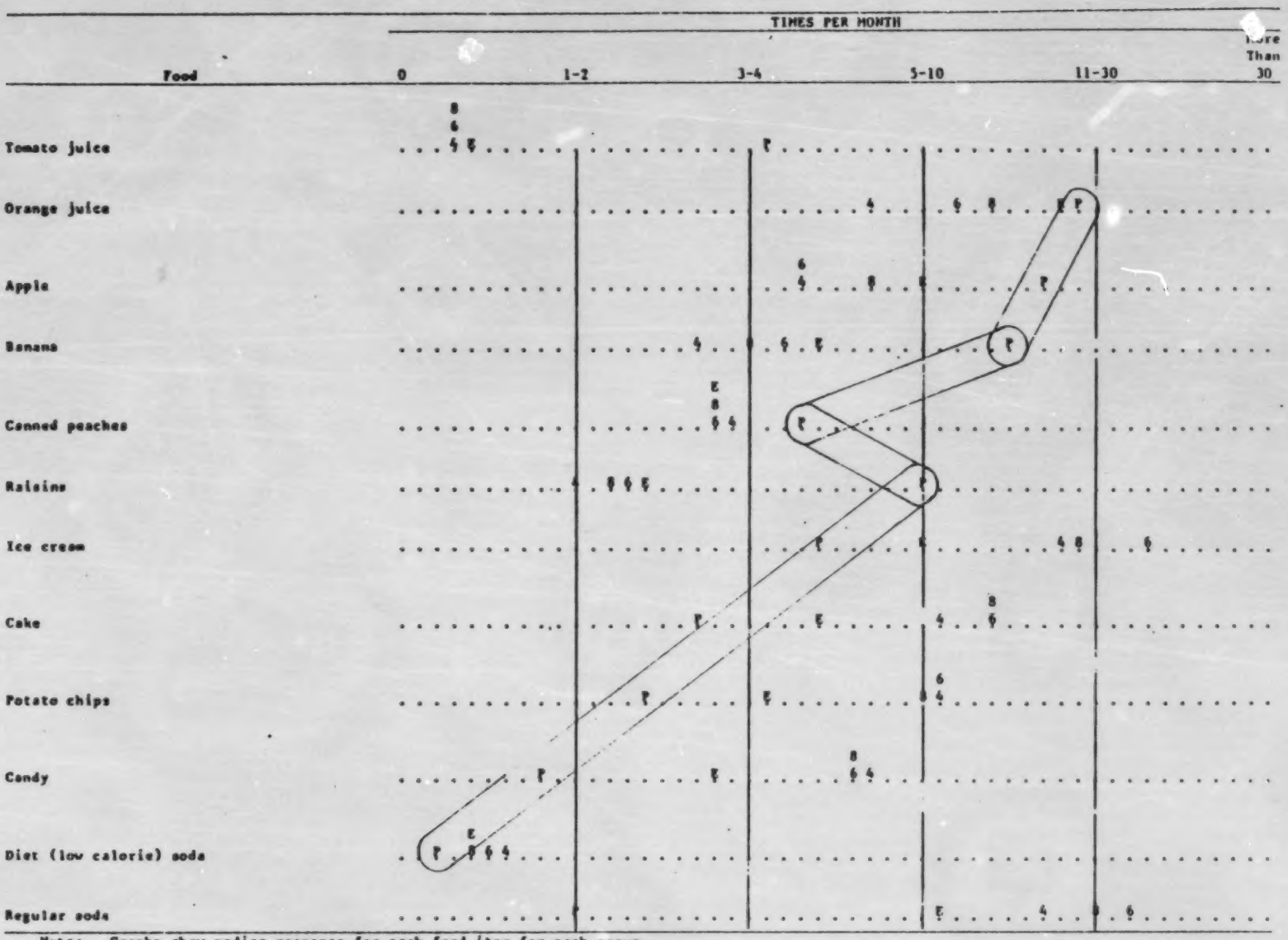
FOOD PREFERENCES OF STUDENTS AND PARENTS



8.22

Exhibit 8.15 continued

FOOD PREFERENCES OF STUDENTS AND PARENTS



Note: Graphs show median response for each food item for each group.

Groups: 4= Grade 4 (N=663)
6= Grade 6 (N=575)
8= Grade 8 (N=606)
E= Grade 11 (N=453)
P= Parents (N=542)

Parents were asked how many times per month they would like their child to eat the food.

8.23

145

146

Reasons Students Do Not Eat the School Lunch

Exhibit 8.16 displays the percentage of students and parents (by grade) who indicated various reasons why they/their children do not eat the school lunch. The data shows that parents and students were in agreement that "I don't like the food" and "I'd rather bring a lunch" were the two primary reasons for not buying the school lunch. Dislike of the food was cited by 36 percent of the students and 41 percent of the parents, while bringing a lunch from home was given as a reason by 27 percent of the students and 33 percent of the parents. The cost of the lunch, preference for a la carte foods, and the wait in line were the next most frequently mentioned reasons by both students and parents. Very few differences were noted between parents and students in the importance of the different reasons.

For most of the reasons, there were no differences across grade levels. At the secondary level, where students have more a la carte choices available to them, a higher preference for buying a few items was noted. Another exception was that fewer eighth graders wanted to bring a lunch from home (19 percent vs. 28-32 percent for other grades). Exhibit 8.16 also confirms the concern of waiting in line expressed earlier by secondary school students. One-third of the eleventh grade students cited the wait in line as a reason for not buying the school lunch.

What Students Do When They Don't Eat the School Lunch

Major differences are noted in Exhibit 8.17 between what students reported doing for lunch when they don't eat the school lunch and what parents perceive their children are doing for lunch under these same circumstances. Parents and students were in agreement, however, that "buying food on the way to school" was not a common practice and done by less than 2 percent of the students. More parents (67 percent) than students (53 percent) saw bringing lunch from home as the alternative to not eating the school lunch. As one might expect, elementary school students were more likely to bring lunch from home than were secondary students. A major difference was noted in the percentage of students (28 percent) who said they bought some food at school but not the full school lunch and the percentage of parents (one percent) who said their children do this. Secondary students took this action twice as frequently as elementary students. Although less than one percent of the fourth, sixth, or eighth grade students cited eating in a restaurant as an option to the school lunch, 29 percent of the eleventh grade students checked this response. Although only 2 percent of the secondary parents indicated this action on the part of their children, it should be noted that the secondary parents surveyed have children in Grades 7 and 10 and 7th graders are not allowed to leave school for lunch. Large differences between parents and students were seen with the option "do not eat lunch". Only 3 percent of all parents thought their child sometimes did not eat any lunch while 16 percent of all students said they sometimes did not. The differences between parents and students were greatest at the secondary level where only 8 percent of the parents thought their child did not eat lunch. Twenty-one and 38 percent of the eighth and eleventh grade students respectively said they sometimes did not eat a lunch.

Exhibit 8.16
REASONS STUDENTS DO NOT EAT THE SCHOOL LUNCH EVERYDAY

	STUDENTS					PARENTS			
Reason	Grade 4	Grade 6	Grade 8	Grade 11	All Students	Grade 3	Grade 5	Grade 7/10	All Parents
I don't like the food.	29	33	35	50	36	43	46	29	41
I'd rather bring a lunch.	32	31	19	28	27	31	35	31	33
The lunch costs too much.	16	16	20	21	18	14	11	13	12
I'd rather buy just a few things (like soup or sandwich).	8	8	16	28	14	10	8	17	11
I have to wait in line too long.	10	5	15	33	14	5	4	15	7
I'd rather go home for lunch.	5	3	4	11	5	-	-	-	-
I'm on a special diet.	2	2	3	6	3	2	2	1	2
My parents won't let me.	3	5	3	2	3	6	6	6	6
Because of my religion.	2	2	2	1	2	2	0	1	1
My child would rather go out for lunch.	-	-	-	-	-	1	1	3	1
Other	11	6	12	22	12	9	8	6	8

NOTE: Table entries are percentage of respondents who checked the reason. Responses do not total 100 percent because respondents could check more than one answer. Wording is from student surveys. Parent survey had parallel wording, for example, "My child is on a special diet."

Exhibit 8.17

WHAT STUDENTS DO WHEN THEY DON'T GET THE SCHOOL LUNCH*

Action	STUDENTS Grade 4	Grade 6	Grade 8	Grade 11	All Students	PARENTS Grade 3	Grade 5	Grade 7/10	All Parents
Bring lunch from home	64	59	43	46	53	70	72	56	67
Buy food on way to school	4	1	1	2	2	1	1	0	1
Buy some food at school but not the full school lunch	18	19	35	41	28	2	2	0	1
Go home for lunch	3	5	2	12	5	7	9	21	11
Go to a restaurant near school	-	1	1	29	6	1	1	2	1
Do not eat lunch	3	7	21	38	16	2	1	8	3

*Table entries are percentage of respondents who checked the alternative. Responses do not equal 100 percent because respondents could check more than one answer. Wording is from student questionnaire. Parent wording varied slightly.

Feelings Toward the Price of the School Lunch

Exhibit 8.18 shows that parents consistently felt that the school lunch is a better buy than did students and that principals and teachers felt even stronger that it is a good buy. Grade tended to make a difference with students; 36 percent of the fourth graders thought lunch was a good buy; but from sixth grade through high school, only 19-22 percent of the students thought it was a good buy. Grade of their children made little difference in parents' general opinions that the school lunch was a good buy.

Exhibit 8.18

RESPONDENTS WHO THOUGHT THE SCHOOL LUNCH IS A GOOD BUY*

Respondent Group	N	%
Students		
Grade 4	234	36
6	145	22
8	125	19
11	145	22
Parents		
Grade 3	89	69
5	87	67
7/10	48	63
Teachers	170	75
Principals	66	87

*Respondents who checked "agree" or "agree very much" to this statement: "The lunch is a good buy."

Identical results were found in the data on respondents' desire to reduce school lunch prices as reported in Exhibit 8.19. This exhibit shows the number and percentage of the respondent group that listed "reduce the price of the lunch" as one of their top four suggested changes in the school lunch program. Consistently more students selected "reduce the price of the school lunch" than did parents. Even fewer principals, teachers, or cafeteria staff selected reducing price as one of their four changes to the school lunch program.

Exhibit 8.19

RESPONDENTS WHO WANTED TO REDUCE SCHOOL LUNCH PRICES*

Respondent Group	Rank Order (Out of 23)	N	%
Students			
Grade 6	2	211	52
8	3	182	47
11	6	97	28
Parents			
Grade 3	16	25	11
5	11	35	14
7/10	7	31	24
Teachers	18	45	9
Principals	17	6	11
Cafeteria Staff	15	13	9

*Respondents who selected "Reduce the price of the lunch" as one of the top four changes they would like to see in the lunch program.

Parent Knowledge of the School Lunch Program

Nine multiple choice questions were developed to determine how much parents knew about the school lunch program in MCPS. Questions dealt with such topics as the required components of the school lunch, who determines portion size, and menus in the satellite kitchens. The nine questions were assembled into two sets of five, and one or the other set was included in each parent survey instrument. Exhibit 8.20 indicates the percentage of parents (by grade) which answered 0-5 questions correctly. Over half of the parents (60 percent) answered one or less of the questions correctly and only 27 percent answered more than two of these questions correctly. The results indicate that parents knowledge of the Food Service Program is extremely limited. The grade of parents' children was not related to how much parents knew about the program.

Exhibit 8.20

PARENTS KNOWLEDGE OF SCHOOL LUNCH PROGRAM*

Number Correct	Grade 3 N=414	Grade 5 N=400	Grade 7/10 N=246	All Grades N=1050
		Grade		
0	29	29	25	28
1	30	32	34	32
2	20	21	24	22
3	15	12	10	10
4	5	7	6	6
5	1	0	1	1

*Exhibit entries are percentages within column.

Implications of the Findings

The results of the surveys portray many positive perceptions of the school lunch program at the elementary level. A majority of the elementary students' parents believed that the food tastes good most of the time, that students like the food served and that it is nutritious. On the other hand, there appears to be room for improvement in the program in that a sizeable minority disagreed with these statements. Also, while the elementary principals were very positive in their feelings about the school lunch program, the elementary teachers were substantially less positive. The overwhelming number of elementary students and parents of elementary students who selected "Make the food taste better" as one of the key changes needed in their school lunch program further suggests a need for improving the quality of food being offered at the elementary level.

At the secondary level the findings reveal a significantly less positive environment. Less than 40 percent of the eleventh grade students felt that "the food tastes good most of the time" and less than 30 percent of the same group said they "liked most of the food served." Over 60 percent of the secondary students agreed with the statement that "they always serve the same things." Eighty percent of eleventh graders indicated they have to wait too long in line to get lunch. The wait in line appears to be a particular problem at the secondary level. "Reduce the amount of time in line" was one of the most frequently recommended changes in the lunch program from secondary students and parents of secondary students. The wait in line was also cited by one-third of the eleventh graders as one of the reasons why they do not eat the school lunch. Although the overall attitude of secondary school parents was more positive than the students', they expressed similar concerns about variety and the length of lunch lines. The percentage of secondary school teachers who expressed agreement with the positive statements toward the school lunch program was consistently and significantly less than for elementary school teachers. The overall conclusion to be drawn from these

findings is that efforts need to be explored which would address the concerns for variety, taste, and convenience of the school lunch program at the secondary level.

The findings also highlight some of the problems faced by the Division of Food Services in responding to parental criticism of the lunch program. The top managers in Food Services have expressed the view that parents sometimes criticize the lunch program unjustly without understanding the problems it faces. A number of parent committees have been formed over the years to deal with various concerns about the lunch program. Regardless of how representative vocal parents' criticism of the lunch program may be (and the survey data indicate in many instances it may not be), bad public relations can have a substantial negative impact on participation rates and overall support of the program.

It is likely to continue to be difficult for Food Services to institute changes responsive to parental criticism while at the same time maximizing participation and minimizing plate waste because as the study found:

- children want to eat nutritious food less often than their parents want them to
- children want to eat less nutritious foods more often than their parents want them to
- parents would like to see more fresh fruits and raw vegetables in the school lunch; children do not express a desire for either one
- variety in the menu from day to day is more of an issue for parents than it is for elementary school children
- the lunch program is controlled to a large extent by state and federal regulations about which parents know very little

In sum, these findings have identified a nutritional problem in children's food preferences. They have also identified a potential or actual public relations problem in that parents' concerns are not necessarily children's concerns and that, furthermore, parents know very little about the operation of the school lunch program.

Recommendations

It should be noted that most of the topics discussed in this report have some effect on attitudes; and consequently, many of the recommendations made in other chapters could improve student, parent, or staff attitudes toward the school lunch program. Likewise, however, the reader should be alert to the fact that certain recommendations in other chapters might adversly affect attitudes. The specific findings of this chapter support the following recommendations:

- Continue to explore alternative innovative programs directed toward improving the acceptability of the Food Services Program particularly at the secondary level. Examples of alternative programs which could

be investigated are (1) hot and cold sandwich combos which resemble the food offered in fast-food chains (2) salad bars and (3) alternative conventional lunches. Formally evaluate programs which are currently being piloted to determine their acceptability and transferability to other schools. These alternatives provide students with a variety of more desirable food items and can generally be served more efficiently, thus reducing the time in line.

- Investigate alternative lunch period arrangements, physical facilities, and staffing patterns which will decrease the time secondary students have to wait in line to be served. A school by school assessment should be made of the cafeteria's maximum capacity per lunch period and compared to the number of students scheduled per lunch period. Since Food Services administrators have no authority over school scheduling, implementation of this recommendation will have to be a cooperative effort with the area offices and school principals.

- Develop ongoing procedures for informing parents about the operation of the lunch program. Possible methods might be presentations before parent groups, information brochures, or articles for school newsletters.

The survey findings also point out the need for nutrition education particularly for elementary students. This will be addressed in the next two chapters.

CHAPTER 9 SUMMARY

PLATE WASTE

The issue of plate waste is central to school lunch programs and is a primary focus of the MORE Food Services Study. Data for the plate waste portion of the study were collected for two consecutive days in each of 34 school cafeterias. Data collectors coded food items, initial servings, type lunch, sex and grade of student, and amount of each food item remaining at the end of the meal. These data were recorded for each of the four types of lunches: the regular school lunch, the alternate lunch, lunch brought from home, and a la carte.

Overall, the study found that (1) the consumption of meat/protein items was generally high, (2) with a few exceptions, the consumption of bread was also generally high, (3) consumption of fruit food items varied considerably in the regular school lunch, (4) consumption rates for most vegetables were low, and (5) consumption rates for desserts as a whole were high. Although the number of food items common to both the regular and alternate lunches was relatively small, several observations are noted. With only a few exceptions, consumption was higher for food components in the alternate lunches. A comparison of plate waste between lunches brought from home and the regular school lunch was difficult because of the differences in the food items contained in each type of lunch. For those food items which were common to both types of lunches, consumption appeared to be slightly higher for lunches brought from home.

An analysis of consumption data by grade showed that (1) the consumption of meat/protein food items increased with grade level, (2) with a few exceptions, grade did not make a difference in the consumption of vegetables, and (3) grade did not impact on the consumption of fruit food items.

Plate waste is a complicated problem and is affected by numerous variables, over many of which Food Services has little control. Food Services and individual cafeteria managers have tried many different approaches to reducing plate waste. One effort to reduce plate waste at the secondary level has been the federal Offer vs. Serve Program. Students may select as few as three of the five food items and still meet Type A lunch requirements. This program has allowed cafeteria managers to reduce plate waste by expanding student choice while maintaining control over production. In October, 1981, federal regulations were modified to allow the expansion of the Offer vs. Serve Program to the elementary level; and although it is too soon to evaluate the results, MCPS has implemented Offer vs. Serve in elementary schools.

Recommendations

- Alternatives for increasing consumption of the vegetable/fruit food component should be explored.
- Emphasis should be given to nutrition education programs as a means of reducing plate waste.

CHAPTER 9

PLATE WASTE

Introduction

It is estimated that across the country $600 million of school lunch food is served but not consumed annually. Consequently, the issue of plate waste is central to school lunch programs and is a primary focus of the MORE Food Services Study. The major objectives of this chapter are to determine the extent of plate waste in MCPS school cafeterias and the relationship between type of lunch and plate waste. An analysis of plate waste by type of cafeteria (on-site vs. satellite) is included in Chapter 11.

Data for the plate waste portion of the study were collected for two consecutive days by direct observation conducted in all 34 sample school cafeterias. Data collectors coded food items, initial servings, type lunch, sex and grade of student, and amount of each food item remaining at the end of the meal. The amount remaining was estimated as 0, 25, 50, 75, or 100 percent for each food item. See Appendix A for a detailed description of data collection procedures. Exhibit 9.1 provides sample size data for the plate waste study. The sample size for Grade 10 is relatively low due to the difficulty of data collection.

Data on what parts and how much of their lunch students throw away can be used to address three issues. The first is the question of how much food is being wasted. The second issue deals with students' attitudes toward various foods. The information on what student actually eat complements the information on students' food preferences presented in Chapter 8. The last issue is the nutritional question of whether students are eating balanced meals. The data presented in this chapter concern plate waste and student attitude toward individual food items. Questions related to nutrition and balanced meals are covered in Chapter 10.

Consumption by Food Item

The amount of each food item remaining on a student's tray at the end of the lunch period was observed and recorded for each of the four types of lunches: the regular school lunch, the alternate lunch, lunch brought from home, and a la carte. Consumption (the amount eaten) was calculated by multiplying the amount served by one minus the percent remaining (e.g., 1 x (1-.25) = .75 eaten). Although the amount served was usually one, in some cases it was greater than one (e.g., when a student took two pints of milk or two sandwiches). Exhibit 9.2 displays the average amount eaten (by lunch type) for each food item. Food items with less than 15 observations were not included in the data.

Data in Exhibit 9.2 indicates that, as one might expect, average amounts eaten for the meat/protein food components were generally high, fruits mixed and generally low, and vegetable consumption generally poor. Specific observations for the regular school lunch are the following

Exhibit 9.1

NUMBER OF LUNCHES OBSERVED BY GRADE,
TYPE OF LUNCH, AND SEX

Lunch Type	Grade 1	Grade 3	Grade 5	Grade 7	Grade 10	Total
Regular School Lunch						
Male	242	539	550	254	39	1624
Female	207	496	516	319	30	1568
Total	449	1035	1066	573	69	3192
Alternate						
Male	30	70	70	14	35	219
Female	28	64	83	25	25	225
Total	58	134	153	39	60	444
Lunch From Home						
Male	6	379	445	101	29	960
Female	1	435	529	146	56	1167
Total	7	814	974	247	85	2127
A La Carte Only						
Male	-	7	14	35	21	77
Female	-	7	7	33	43	90
Total	-	14	21	68	64	167
Total						
Male	278	995	1079	404	124	2880
Female	236	1002	1135	523	154	3050
Total	514	1997	2214	927	278	5930

Note: Total number of lunches observed was 6015. Sex, lunch and/or grade data was missing for 85 lunches.

Exhibit 9.2
AVERAGE QUANTITY EATEN FOR EACH LUNCH TYPE

Food Item	School Lunch Mean	School Lunch N	Alternate Lunch Mean	Alternate Lunch N	Lunch from Home Mean	Lunch from Home N	A La Carte Mean	A La Carte N
MEAT/PROTEIN								
Cheese, Cottage Cheese	.69	321	.73	308	.89	297	-	-
Cheese stick	.72	68	-	-	-	-	-	-
Chicken, BBQ	.71	39	-	-	-	-	-	-
Chicken, fried	.77	268	-	-	.86	28	-	-
Chicken, oven-baked or broiled	.73	127	-	-	.89	49	-	-
Chicken salad	-	-	-	-	1.00	15	-	-
Burrito filling	.73	70	-	-	-	-	-	-
Egg, Hard boiled or deviled, Quiche	-	-	-	-	1.01	21	-	-
Egg salad	-	-	-	-		-	-	-
Fish	.82	283	-	-	.88	41	-	-
Flying Saucer	-	-	-	-	-	-	-	-
Gyros	.84	94	-	-	-	-	-	-
Ham, Ham Salad	-	-	-	-	.90	310	-	-
Hamburger	.87	360	.99	20	-	-	-	-
Hot dog, chili dog, knockwurst, smokies	.87	15	.99	36	-	-	-	-
Luncheon meats, Sausage	.86	29	.68	34	.86	450	-	-
Macaroni & Cheese	.75	86	-	-	-	-	-	-
Peanut butter (with jelly)	.97	47	.90	17	.90	514	-	-
Peanut butter (without jelly)	.59	124	.88	31	.84	151	-	-
Pizza	.87	757	-	-	-	-	-	-
Pork BBQ	.89	29	-	-	-	-	-	-
Roast beef, Sliced Beef	-	-	-	-	.83	60	-	-
Salisbury steak, Meat Loaf	.83	71	-	-	-	-	-	-
Sloppy joe, Chili	.79	105	-	-	-	-	-	-
Spaghetti with meat sauce	.88	96	-	-	-	-	-	-
Steak & Cheese	.88	58	-	-	-	-	-	-
Taco filling and cheese	.79	72	-	-	-	-	-	-
Tuna fish salad	.79	28	.79	29	.85	127	-	-
Turkey, Turkey Salad	.88	49	-	-	.93	57	-	-
Turkey dog	.90	98	-	-	-	-	-	-
Yogurt	-	-	-	-	.96	25	-	-
Other	-	-	-	-	1.14	31	-	-

Exhibit 9.2 continued
AVERAGE QUANTITY EATEN FOR EACH LUNCH TYPE

Food Item	School Lunch Mean	School Lunch N	Alternate Lunch Mean	Alternate Lunch N	Lunch from Home Mean	Lunch from Home N	A La Carte Mean	A La Carte N
BREAD								
Bagel	-	-	-	-	.88	25	-	-
Corn Bread	.37	38	-	-	-	-	-	-
French or Italian Bread	.91	145	-	-	-	-	-	-
Pita Bread	.82	112	-	-	-	-	-	-
Rye or Pumpernickel Bread	-	-	-	-	.85	85	-	-
Wheat Bread	.86	16	-	-	.83	252	-	-
Crackers	.72	18	-	-	1.44	92	-	-
Macaroni, Other pasta	.46	141	-	-	-	-	-	-
Pizza Dough	.85	760	-	-	-	-	-	-
Rice	.63	147	-	-	-	-	-	-
Spanish Rice	.47	35	-	-	-	-	-	-
Dinner Roll	.43	424	-	-	-	-	-	-
Hamburger or Twist Roll	.82	943	.83	101	.82	34	-	-
Hoagie, Submarine or Hard Roll	.86	57	-	-	.69	16	-	-
Hot Dog Roll	.87	113	.99	36	-	-	-	-
Wheat Roll	.64	109	-	-	.88	43	-	-
White Bread	.82	310	.77	289	.88	1400	.98	33
Taco Shells	.70	72	-	-	-	-	-	-
FRUIT								
Apple, Fresh	.50	417	.42	73	.63	423	-	-
Applesauce	.70	343	-	-	-	-	-	-
Apricot & Pear Cup	.64	49	-	-	-	-	-	-
Banana, Fresh	.81	79	-	-	.80	117	-	-
Fruit Bar	.65	34	-	-	-	-	-	-
Fruit Cup, Canned & Mixed	.67	333	-	-	.86	22	-	-
Grapes	-	-	-	-	-	-	-	-
Juice	.99	40	.88	89	.94	205	1.10	17
Orange or Tangerine, Fresh	.64	427	.59	89	.72	358	-	-
Pears, Canned	.72	179	.73	39	-	-	-	-
Pears, Fresh	-	-	-	-	.74	33	-	-
Peaches, Canned	.67	147	-	-	-	-	-	-
Pineapple Sections, Canned	.75	238	-	-	-	-	-	-
Raisins	.57	19	-	-	.84	56	-	-
Other	-	-	-	-	.95	27	-	-

Exhibit 9.2 continued

AVERAGE QUANTITY EATEN FOR EACH LUNCH TYPE

Food Item	School Lunch Mean	School Lunch N	Alternate Lunch Mean	Alternate Lunch N	Lunch from Home Mean	Lunch from Home N	A La Carte Mean	A La Carte N
VEGETABLES								
Baked Beans	.38	103	-	-	-	-	-	-
Green Beans	.25	103	-	-	-	-	-	-
Bean Salad	.28	142	-	-	-	-	-	-
Broccoli	.40	140	-	-	-	-	-	-
Carrot Sticks	.50	70	-	-	1.20	109	-	-
Cooked Carrots	.20	82	-	-	-	-	-	-
Celery Sticks	.52	128	.88	39	1.10	32	-	-
Corn	.58	248	.52	46	-	-	-	-
Lettuce (on sandwich)	.34	101	.50	62	.83	55	-	-
Lettuce/green salad	.57	426	.67	28	-	-	.67	15
Mixed Vegetables	.32	118	-	-	-	-	-	-
Peas	.22	284	-	-	-	-	-	-
Baked Potatoes	.55	73	-	-	-	-	-	-
French Fried Potatoes, Ranch Fries	.83	414	.87	142	-	-	.91	24
Mashed Potatoes, Sweet Potatoes	.73	110	-	-	-	-	-	-
Tater Rounds Potatoes	.89	365	.89	181	-	-	-	-
Spinach	.50	71	-	-	-	-	-	-
Tomatoes	.50	19	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-
DESSERT								
Brownies	.92	42	-	-	1.08	34	-	-
Cake	.87	95	-	-	1.00	129	-	-
Packaged Cakes	.73	44	-	-	.97	122	-	-
Candy Bar	.75	38	-	-	.84	195	-	-
Cookies (Oatmeal peanut butter, corn meal)	.90	235	1.08	16	1.74	137	-	-
Cookies (Other)	.91	674	.97	19	1.78	533	2.34	33
Cupcakes	-	-	-	-	1.05	116	-	-
Doughnuts	1.11	51	-	-	.92	43	-	-
Fruit Crisp	.41	253	-	-	-	-	-	-
Fruit Juice Bar	.85	60	.84	34	-	-	-	-
Ice Cream	1.02	545	1.01	92	1.02	392	1.12	29
Jello	.94	107	-	-	-	-	-	-
Pie	-	-	-	-	.92	24	-	-
Pudding	.82	148	-	-	.92	36	-	-
Other	1.00	22	-	-	1.15	21	-	-

Exhibit 9.2 continued
AVERAGE QUANTITY EATEN FOR EACH LUNCH TYPE

Food Item	School Lunch Mean	School Lunch N	Alternate Lunch Mean	Alternate Lunch N	Lunch from Home Mean	Lunch from Home N	A La Carte Mean	A La Carte N
SALT SNACKS								
Cheese & Crackers	.35	24	-	-	.87	40	-	-
Cheese Doodles	.83	16	-	-	.90	155	-	-
Corn Chips	.93	30	-	-	.96	283	-	-
Peanut Butter/Cheese Cracker	1.40	17	-	-	1.18	54	-	-
Popcorn	-	-	-	-	.94	31	-	-
Potato Chips	.80	28	-	-	.92	325	-	-
Pretzels	1.10	21	-	-	.86	84	-	-
Soft Pretzels	-	-	-	-	.95	15	-	-
Salted Nuts	-	-	-	-	.89	37	-	-
Other	-	-	-	-	-	-	-	-
BEVERAGES								
Chocolate Milk	.85	2412	.84	342	.96	682	.97	47
Skim or Lowfat White Milk	.83	551	.66	77	.93	273	1.05	15
Fruit Drink	.97	117	1.01	58	.95	202	1.02	15
Iced Tea	-	-	-	-	.90	34	-	-
Lemonade	-	-	1.03	23	-	-	-	-
Soda	-	-	-	-	.90	32	-	-
Unknown	.42	19	-	-	.85	17	-	-
OTHER								
Granola	-	-	-	-	.86	35	-	-
Jelly	-	-	-	-	.88	20	-	-
Peanut-Raisin Cup	.77	71	-	-	-	-	-	-
Pickles	.78	78	.80	42	.88	23	-	-
Soup	.70	133	.54	51	.97	34	-	-
Unknown	-	-	-	-	-	-	-	-

- The consumption of meat/protein items was generally high. For example, on the average, 87 percent of a pizza serving, 88 percent of a spaghetti serving and 87 percent of a hot dog were eaten. Within the meat/protein food component, cheese and chicken consumption were lower than other food items, 69 percent and 77 percent (fried chicken), respectively.

- With a few important exceptions, the consumption of bread was also generally high. For instance the average percent of serving eaten was 91 for french bread and 82 for hamburger rolls. Low items were macaroni (46 percent) and dinner rolls (47 percent).

- Consumption of fruit food items varied considerably in the regular school lunch. Some items, such as fresh apples, showed low consumption (50 percent); while others, such as fruit juices and selected canned fruits, had significantly higher comsumption rates (99 percent for fruit juice, 75 percent for canned pineapple).

- Consumption rates for most vegetables were low. Amounts eaten were in the 20 to 50 percent range for most vegetable food items. The only exceptions were potato items (french fries, 83 percent and tater rounds, 89 percent). Within the vegetable component, corn and carrot/celery sticks had a noteably high consumption rate (58 percent and 52 percent, respectively); and cooked carrots and peas had low consumption rates (20 percent, 22 percent).

- As one might expect, consumption rates for desserts as a whole were high.

Although the number of food items common to both the regular and alternate lunches was relatively small, several observations are noted. With only a few exceptions, consumption was higher for food components in the alternate lunches. This was particularly evident with vegetables.

A comparison of plate waste between bag lunches brought from home and the regular school lunch was very difficult because of the differences in the food items contained in each type of lunch. For example, bag lunches seldom contained vegetables other than carrot or celery sticks. For those food items which were common to both types of lunches, consumption appeared to be slightly higher for lunches brought from home. This was found to be particularly true for meat/protein and fruit food items.

Average Amount Eaten by Grade

Appendix F presents the consumption data analyzed by student grade rather than type of lunch. Consumption data is for the regular and alternate school lunches and does not include a la carte or bag lunches. Specific findings are the following

- The consumption of meat/protein food items increased with grade level. The increases were quite significant for a number of food items; e.g., consumption rates of luncheon meats were 63 percent for third graders, 74 percent for fifth graders, and 90 percent for seventh graders.

- With a few exceptions, grade did not make a difference in the consumption of vegetables. For selected vegetables (i.e., french fries), grade increase had a positive effect on consumption; and for other vegetables (i.e., broccoli), grade increase had a negative effect.

- Overall, grade did not impact on the consumption of fruit food items.

- There was a slight, but not significant, increase in the consumption of bread with grade level increases.

- Consumption rates for dessert food items were generally high and increased with grade.

Efforts Made to Reduce Plate Waste

As was mentioned earlier, plate waste is a complicated problem and is affected by numerous variables, over many of which Food Services has little control. However, Food Services and individual cafeteria managers have tried many different approaches to reducing plate waste. Cafeteria managers and satellite workers reported taking the following steps to reduce the amount of food students throw away

- Ensuring food is served at the right temperature

- Encouraging children to take fruit juice if they don't like fresh fruit

- Ensuring food is tastefully and attractively served

- Offering choices

- Implementing Offer vs. Serve at the secondary level

- Offering alternate lunches

- Conducting surveys to determine food preferences

- Substituting desirable food items where possible.

Food Services reported that one of the most successful efforts to reduce plate waste at the secondary level has been the federal program of Offer vs. Serve. Offer vs. Serve is a National School Lunch Program which was mandated by Congress in an effort to reduce plate waste. Students may select as few as three of the five food items and still meet Type A lunch requirements. This program has allowed cafeteria managers to reduce plate waste by expanding student choice while maintaining control over production.

Implications of the Findings

Efforts to locate a standard to which the plate waste in MCPS could be compared were unsuccessful. It is therefore difficult to make a judgment as to whether the amount of plate waste observed was low, reasonable, or

excessive. Furthermore, it is almost impossible to make fair comparisons with other plate waste studies because of differences in how the information is collected and analyzed.

Interpretation of the consumption data is somewhat dependent on the frame of reference used. While the individual proportion of serving consumed was high for many foods in the school lunch, there was still a large quantity of food wasted. For example, for items such as bananas, tater rounds and hamburgers, the average quantity consumed was in the 80 to 90 percent range. Clearly the major portion was eaten. However, another way to look at this same number is that for every ten items served an amount equal to 1 to 2 was thrown away. Waste for some other foods was larger. For every four servings of chicken, an amount equal to one serving was thown away. For every three servings of bean salad, more than two were thrown away. When these figures are multiplied by the total number of school lunches served, they indicate a sizeable quantity of food is ending up in the garbage. For some food items, plate waste may already be at a minimum; for others, steps can surely be taken to improve consumption.

One possible explanation for the decrease in waste as grade level increases is that the federally controlled serving sizes are more suited to the needs of the older students. There are probably more children in the lower grades for whom the school lunch is too much food. However, the data from the student survey reported in Chapter 8 did not indicate that younger students felt their servings were too large. Quite the contrary, there were several survey results which say that students at all grade levels believe portions are too small. Regardless, serving size at the present time is outside the control of Food Services because it is dictated by federal regulations.

A recent report to Congress by the General Accounting Office (GAO) indicated that food services personnel across the country felt that the following three factors had a significant impact on quantity of plate waste

- o Variety of foods
- o Lunchroom atmosphere
- o Nutrition education

The GAO study also found that the federal Offer vs. Serve Program has been successful in reducing plate waste at the secondary level. In October 1981 federal regulations were modified to allow the extension of the Offer vs. Serve Program to the elementary level.

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[1]General Accounting Office Report to the Congress, Efforts to Improve School Lunch Programs--Are They Paying Off? September 9, 1981.

Recommendations

- Alternatives for increasing consumption of the vegetable/fruit food component should be explored.
- Emphasis should be given to student nutrition education programs as a means of reducing plate waste.

CHAPTER 10 SUMMARY

NUTRITIONAL ISSUES

Over the years, individual parents and community organizations such as the Montgomery County Council of PTA's have expressed interest and concern for establishing and maintaining high levels of nutritional quality in meals served in schools. Consequently, this study addressed several issues which deal with nutrition.

An analysis of the amounts of nine nutrients supplied by school lunches and bag lunches brought from home was conducted. The nutrient analysis calculated the average amount of nine nutrients in school menu lunches over a five-day period. Hypothetical bag lunches were also analyzed for their nutrient content. For secondary students, typical a la carte lunches were included as well. The nutrients examined were calories, protein, fat, calcium, iron, sodium, Vitamin A, riboflavin and Vitamin C. Sugar content was also examined. Recommended Dietary Allowances (RDA) are defined as levels of intake of essential nutrients considered to be adequate to meet the known nutritional needs of practically all healthy persons. The study considered the quantity of a nutrient adequate if it met at least 90 percent of one-third of the RDA. For some nutrients, excessive intake may be harmful. Calories, Vitamin A, and sodium were considered excessive if they were greater than 200 percent (2 times) the RDA or National Research Council (NRC) recommended levels. To construct a measure of sugar, the number of foods in a daily menu to which sugar was added as a part of production was counted (e.g., cake and chocolate milk). These counts were added together for a week and divided by five days to determine the average number of sugar-added foods served in each lunch. The nutrient content of the foods were derived from (1) "Nutritive Value of American Foods in Common Units," Agriculture Handbook 456, USDA, 1975, (2) food labels, and (3) manufacturer's information.

The U. S. Department of Agriculture requires that school lunch menus contain at least four food components served as five food items to be approved for financial reimbursement. USDA-required school lunch food items are (1) meat/meat alternate, (2) fruit/vegetable, (3) a second different fruit/vegetable, (4) bread/bread alternate, and (5) milk. All MCPS school lunch menus examined for the nutrient analysis provided all USDA-mandated components for both daily and weekly requirements.

A standard recommended, but not required, by the federal government is the provision of approximately one-third of the child's Recommended Dietary Allowances (RDAs) of nutrients. Because of the nutritional superiority of the RDA standard and because of parental concern with the nutrition issues, the MORE Study of School Food Services also evaluated school lunch menus with respect to the percentage of the RDA provided.

The results of the nutrient analysis showed that, although the one-third RDA requirement for all nutrients was not completely met for any age by sex grouping with the school lunch menus, meals were of high nutritional value. The regular and alternate elementary lunch menus (with milk) for 7-10 year olds met all RDA requirements and NRC guidelines, except calories. The remainder of the elementary school lunch menus were below the designated range in some combination of calories and iron. In fact, iron was below the designated range in most lunch types except elementary lunches for ages 7-10.

Secondary school lunch menus (with milk) met all the RDA requirements with the single exception of iron. The hypothetical lunch brought from home for students in the grades 7-10 age group met all of the RDA nutrient requirements. The bag lunch for both male and female secondary students also met all of the RDA nutrient requirements. Although no regular school lunch met all the RDA nutrient requirements and NRC guidelines, the lunch menus met more nutrient requirements than the General Accounting Office (GAO) found in a recent study of seven school districts around the country.

Coded observations of food consumed in actual lunches were analyzed to learn what proportion of students eat various kinds of food. The findings were that for students who buy the school lunch or bring a lunch from home, the overwhelming majority ate at least one-half serving of a meat/protein food and a bread food. Substantially fewer students who purchased a la carte lunches had meat/protein or bread foods for lunch. The proportion of students who ate vegetables or fruit or drank milk was higher for the school lunch than for lunch brought from home or purchased a la carte. The percentage of students who ate salt snacks for lunch was highest for the lunch brought from home and lowest for students who bought the school lunch. Some small differences were found between male and female students. The biggest difference was for meat/protein foods in the a la carte lunch where 50 percent of the male students ate a meat/protein food in their lunch compared to only 34 percent of the females. An analysis by grade level showed that more students in the upper grades ate at least half a serving for meat/protein, bread, vegetable and dessert foods in the school lunch. For lunch brought from home, grade level had little effect on the percentage of students who ate a particular type of food.

An analysis was conducted of foods eaten by students to learn whether students ate a balanced meal. A "balance index" was calculated for each individual by adding the actual quantity of food consumed up to a maximum of one serving for meat/protein, bread and milk, and two for fruit/vegetables. Each child's sum was divided by 5 to give a range from 0 to 1. The higher the index, the closer the student's meal was to containing one serving from each of the food groups. The findings for this analysis were: (1) for all grade levels, the average balance index for students who ate the regular or alternate school lunch was significantly higher than for students who brought lunch from home, (2) except for Grade 7, the balance index for the school lunch increased with increasing grade level, (3) the balance index was higher for males than females at every grade level, and (4) a la carte meals consistently showed a significantly lower balance index than either bag lunches or school lunches.

Over the years, parents have frequently expressed concern over the amount of certain food substances that their children receive in the school lunch program. To assist in addressing this concern, students and parents were asked to what extent they/their children eat foods which were high in selected substances such as salt, sugar, artificial food coloring, and general preservatives. Overall, the study found that (1) parents and students were in general agreement that students "sometimes" or "all the time" eat (outside of school) foods which are high in salt, high in sugar, deep fat-fried, and contain artificial coloring and preservatives and (2) there was no difference by grade for the consumption of these foods.

Recommendations

- o Methods to increase the level of calorie content in elementary school lunches and iron in all lunch types should be explored.

- o Emphasis should be given to nutrition education programs as a means of improving students' eating habits.

CHAPTER 10

NUTRITIONAL ISSUES

Introduction

Over the years individual parents and community organizations such as the Montgomery County Council of PTAs have expressed interest and concern for establishing and maintaining high levels of nutritional quality in meals served in schools. Consequently, this study addressed several issues which deal with nutrition.

The first section of this chapter presents an analysis of the amounts of nine nutrients plus sugar supplied by the school lunch menus and hypothetical bag lunches brought from home. The middle sections of the chapter discuss student consumption of foods from various food groups and how balanced a meal students are eating. Lastly, the chapter addresses the types of food that are acceptable/unacceptable to parents and student and the extent to which alternative lunches are served.

Nutritional Analysis of School Lunch Menus

The three primary objectives of the nutrient analysis were to (1) determine if MCPS school lunch menus contain the five food items required by the federal government, (2) determine if (on the average) the school lunch menus as planned, supply one-third the Recommended Dietary Allowance (RDA) of six important nutrients and National Research Council guidelines of additional nutrients for children 7-18, and (3) compare the nutrients provided by the school lunch to nutrients provided by lunches students bring from home or construct themselves through a la carte purchases. The nutrient analysis provided was conducted under contract by a public health nutritionist.

Methodology

The nutrient analysis calculated the average amount of nine nutrients plus sugar in school lunches over a five-day period. The analysis was based on regular and alternate elementary and secondary menus for October 20-24, 1980. Hypothetical bag lunches also were analyzed for their nutrient content. The pilot test of the plate waste data collection procedures (see Chapter 9) provided information as to the types of lunches elementary students frequently bring from home. Based on this information, typical bag lunch menus were constructed for the analysis. For secondary students, some typical a la carte lunches were included as well. See Exhibits 10.1 and 10.2 for the menus included in the analysis.

It is important to note that, in this study, menus, not actual meals, were analyzed. Laboratory analysis of meals, although more accurate than menu analysis, is very expensive and time consuming. In conducting a menu analysis, certain factors of school lunch operation could not be taken into account, such as, (1) substitutions and changes made in lunches actually served in the schools, (2) serving sizes larger or smaller than specified in

Exhibit 10.1

SCHOOL LUNCH MENUS USED FOR NUTRIENT ANALYSIS

School Lunch

	Elementary Regular	Elementary Alternate	Secondary Regular	Secondary Alternate
Day 1	Grilled cheese sandwich Tater rounds Cantalope White or chocolate milk	Submarine or hoagie Choice of fresh or canned fruit White or chocolate milk	Pizza burgers Choice of two: French fries Coleslaw Assorted fruits Cake Milk	Fishwich Tartar sauce Choice of two: French fries Coleslaw Sliced tomatoes Assorted fruits Cake Milk
Day 2	Roast beef on hamburger roll w/gravy Carrot/cabbage slaw Canned peaches White or chocolate milk	Tuna salad sandwich w/lettuce and pickle Tomato soup Choice of fresh fruit White or chocolate milk	Tacos (2) Lettuce Shredded cheese Seasoned corn Choice of one; Assorted fruits Vanilla pudding w/ strawberries Milk	Chicken noodle soup Grilled cheese sandwich Choice of two: Tater rounds Tossed salad Seasoned corn Vanilla pudding w/ strawberries Milk
Day 3	Sliced Turkey w/dressing and gravy Green beans Roll Orange White or chocolate milk	Bologna & cheese sandwich w/lettuce and pickle Choice of fresh fruit White or chocolate milk	Barbecued oven-baked chicken Roll Choice of two: Whipped potatoes w/gravy Seasoned broccoli Coleslaw Assorted fruits Apple crisp Milk	Macaroni & cheese Roll Choice of two: Tossed salad Seasoned broccoli Sliced tomatoes Assorted fruits Apple crisp Milk
Day 4	Spaghetti w/meat sauce French bread Spinach salad Orange wedges White or chocolate milk	Grilled cheese sandwich Tater rounds Choice of fresh fruit or juice White or chocolate milk	SPECIAL Foot long hot dog w/chili sauce French fries Choice of: Salad or assorted fruits Cake Milk	DELI COLD TRAY Turkey Ham Cheese Bologna Potato salad Sliced tomatoes on shredded lettuce 4 pkgs. Crackers each Milk
Day 5	Pizza Choice of fresh or canned fruit Raisin-nut cookie White or chocolate milk	Turkey & cheese sandwich w/lettuce & pickle Choice of fresh or canned fruit Raisin-nut cookie White or chocolate milk	Pizza Choice of two: Tossed salad Assorted fruits Cookie White or chocolate milk	Salisbury steak w/gravy Roll Choice of two: Buttered onions, topping w/shredded cheese oven baked Tossed salad Seasoned peas Cookie White or chocolate milk

menus and required by USDA, (3) loss of nutrients resulting from prolonged cooking and time on the steam table, and (4) Offer vs. Serve in secondary schools whereby students are not required to take every food component. Also, the nutrient calculations presented for the school lunch are valid only for individual students who completely consumed every food offered on the menu as written.

Exhibit 10.2

HYPOTHETICAL BAG LUNCH AND A LA CARTE
MENUS USED FOR NUTRIENT ANALYSIS

Bag/A la Carte Lunches

	Elementary	Secondary
Day 1	Bologna sandwich on white bread with mayonnaise Potato chips Chocolate cupcakes Chocolate milk	Bologna sandwich on white with mayonnaise Potato chips Chocolage cupcakes Chocolate milk
Day 2	Peanut butter and jelly sandwich on white bread Pretzels Apple Cola	Tuna salad sandwich on on whole wheat bread Carrot sticks Tangerine 2 Percent white milk
Day 3	Tuna salad sandwich on whole wheat bread Carrot sticks Tangerine 2 Percent white milk	Hamburger on roll 2 servings french fries Cola
Day 4	Peanut butter and jelly on white bread Pear Potato chips Chocolate milk	Tossed salad with dressing Diet soda
Day 5	Ham and cheese sandwich on whole wheat bread Pickles Apple Candy bar Grape drink	3 slices pizza w/cheese and sausage Lemonade

Nutrients Examined

The nutrients examined were calories, protein, fat, calcium, iron, sodium, Vitamin A, riboflavin, and Vitamin C plus sugar. Protein, calcium, iron, vitamin A, riboflavin (as a representative B vitamin), and Vitamin C were selected because they are considered "indicator nutrients" for nutrition labeling; that is, if a person is getting adequate amounts of these nutrients from foods in which they occur naturally, he is most likely getting adequate amounts of other nutrients.[1]

Calories, fat, sodium, and sugar were selected because the Dietary Guidelines for Americans [2] recommend

- o Maintain ideal weight
- o Avoid too much fat, saturated fat, and cholesterol
- o Avoid too much sugar
- o Avoid too much sodium

Recommended Dietary Allowances (RDAs)

Recommended Dietary Allowances (RDA) are defined as the levels of intake of essential nutrients considered, in the judgement of the Committee on Dietary Allowances of the Food and Nutrition Board on the basis of available scientific knowledge, to be adequate to meet the known nutritional needs of practically all healthy persons.[3]

RDAs are recommendations for the average daily amounts of nutrients that population groups should consume over a period of time. RDA should not be confused with requirements for a specific individual.

Differences in the nutrient requirements of individuals are ordinarily unknown. Therefore, most RDAs are estimated to exceed the requirements of most individuals and thereby to ensure that the needs of nearly all in the population are met. Intakes below the recommended allowance for a nutrient are not necessarily inadequate.[4]

For some nutrients, excessive intake may be harmful as seen in the following:

> Most, but not all, nutrients are tolerated well in amounts that exceed the allowances by as much as two to three times, and a substantial proportion of the population commonly consumes an excess over the RDA for several nutrients without evidence of adverse effects. However, an intake of energy (calories) in excess of requirements is highly undesirable, as it will lead to obesity. High intakes of a number of nutrients - such as vitamins A and D and certain trace elements (e.g., sodium) can be toxic.[5]

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[1]"Nutrition Labeling: How It Can Work For You", National Nutrition Consortium, Inc., Washington, D.C., 1975.

[2]Nutrition and Your Health: Dietary Guidelines for Americans,", USDA and DHHS. Washington, D.C., February,. 1980.

[3]National Research Council, "Recommended Dietary Allowances," (Washington, D.C.: National Academy of Sciences, 1980).

[4]Ibid.

[5]Ibid.

Exhibit 10.3 lists by age and sex of student one-third of the 1980 RDAs that were used in this analysis to assess the adequacy of the six RDA nutrients studied. The study considered the quantity of a nutrient adequate if it met at least 90 percent of one-third of the RDA. Vitamin A was considered excessive if it was greater than 200 percent (twice) the RDAs. Exhibit 10.4 lists by age and sex of student the National Research Council recommended levels for three nutrients not included in the RDAs.

It was necessary to use a different standard for sugar because (1) there is no RDA for sugar and (2) tables of nutrient content of foods combine all carbohydrates found in a food and do not separate out sugar. To construct a measure of sugar, the number of foods was counted in a daily menu to which sugar was added as a part of production e.g., cake, chocolate milk. These counts were added together for a week and divided by five days to determine the average number of sugar-added foods served in each lunch. No judgment was made as to the adequacy/excess of sugar intake.

Procedures for Calculating Nutrients

The nutrient content of the foods was derived from the following

- o "Nutritive Value of American Foods in Common Units," Agriculture Handbook 456, USDA, (Washington D.C.: Government Printing Office, 1975).
- o Food Labels.
- o Manufacturer's information.

The nutrient amounts were calculated as follows:

1. The nutrient content for the nine nutrients was derived from the above references for each menu item.
2. The total amount of a nutrient supplied by all foods in a day's menu was determined.
3. This total was divided by 1/3 of the RDA for that nutrient (See Exhibit 10.3) to determine the percentage of RDA supplied by that menu.
4. The percentages of RDA for the five days were averaged to determine the nutrient content of school lunch menus and hypothetical bag or a la carte lunches.

Lunch Menu Food Component Requirements

There are two standards which the federal government would like to see met in the school lunch program. The first standard is required and involves food components. The U. S. Department of Agriculture requires that school lunch menus contain at least four food components, served as five food items to be approved for financial reimbursement. USDA required school lunch food items are (1) meat/meat alternate, (2) fruit/vegetable, (3) a second different fruit/vegetable, (4) bread/bread alternate, and (5) milk. A second requirement is that weekly menus contain eight servings of bread/bread

Exhibit 10.3

ONE-THIRD RDA REQUIREMENT FOR SCHOOL AGE CHILDREN (1980 RDA)

Sex/Age	Protein	Calcium	Iron	Vitamin A	Riboflavin	Vitamin C
Age 7-10[1]	11.3 g	267 mg.	3.3 mg.	1167 I.U.[2]	.47 mg.	15 mg.
Females, Age 11-14	15.3 g	400 mg.	6 mg.	1333 I.U.	.43 mg.	16.7 mg.
Males, Age 11-14	15.0 g	400 mg.	6 mg.	1667 I.U.	.53 mg.	16.7 mg.
Females, Age 15-18	15.3 g	400 mg.	6 mg.	1333 I.U.	.43 mg.	20 mg.
Males, Age 15-18	18.7 g	400 mg.	6 mg.	1667 I.U.	.57 mg.	20 mg.

[1]Age below 11 years not separated by sex.

[2]I.U. = International Units

Exhibit 10.4

NATIONAL RESEARCH COUNCIL NUTRIENT RECOMMENDATIONS
FOR SCHOOL AGE CHILDREN

Sex/Age	Calories	Fat[2]	Sodium[3]
Age 7-10[1]	800	31.1 g	400 mg.
Females, Age 11-14	733	28.3 g	600 mg.
Males, Age 11-14	900	35 g	600 mg.
Females, Age 15-18	700	27.3 g	600 mg.
Males, Age 15-18	933	36.3 g	600 mg.

[1]Age below 11 years not separated by sex.

[2]The National Academy of Science/National Research Council (NRC) recommends that fat in the diet equal 35 percent of total calories.

[3]The NRC recommends that a safe and adequate intake of sodium for children and adolescents, Age 11 + equal 900-2700 m.g.; the mid point of this average is 1800 mg., 1/3 = 600 mg.; for age 7-10 = 600-1800 mg.; mid point = 1200 mg., 1/3 = 400 mg.

alternative. All MCPS school lunch menus examined for nutrient analysis provided all USDA mandated components for both daily and weekly requirements.

Recommended Dietary Allowances of Nutrients

The second standard set by the federal government is recommended and utilizes Recommended Dietary Allowances (RDAs) of nutrients. USDA states in the National School Lunch Program regulations

> The requirements are designed to provide a nutritious and well-balanced...lunch daily to each child of school age which, averaged over a period of time, will approximate one-third of the child's Recommended Dietary Allowance.[1]

From a nutrition/health viewpoint, this standard i.e., that lunches provide one-third of the recommended dietary allowance, ensures a nutritionally adequate diet better than the USDA food components standard. For example, lettuce and carrots are considered equal by USDA as the fruit/vegetable component for the school lunch; but carrots provide far more nutrients than lettuce. Because of the nutritional superiority of the RDA standard and because of parental concern with the nutrition issues, the MORE Study of School Food Services also evaluated school lunch menus with respect to the percent of the RDA provided.

Exhibit 10.5 summarizes the results of the nutrient calculations for each type of menu (regular school lunch, alternate school lunch, and hypothetical bag/a la carte lunch) and for each age/sex group. Results are presented separately for ages 7-10 (primary grades), 11-14 (upper elementary and middle grades), and 15-18 (secondary grades) because of the different RDAs for these groups. For each nutrient, if the calculated average was at least 90 percent of one-third of the RDA or the NRC recommended level for that nutrient, it was considered within the designated range and marked with an X. If it was less than 90 percent, it was considered below the designated range and marked with a minus (-). For calories, Vitamin A, and sodium, if the average quantity was more than 200 percent of one-third the RDA or the NRC recommended level, it was considered above the designated range and marked with a plus (+).

Nutrients in school lunch menus were analyzed separately for 2 percent white milk, chocolate milk, and no milk. Criticism has been raised by some parents that chocolate milk should not be served in the school lunch program because of its sugar content. It can be seen in Exhibit 10.5 that for some nutrients (calories, calcium, and riboflavin) milk, whether white or chocolate contributes significantly to the RDA and NRC guidelines. For these nutrients, the lunches would be below the designated range if the children drank no milk. Plate waste studies of the school lunch have shown that most children drink chocolate milk. The additional sugar contributed by chocolate milk needs to be weighed against the significant nutrients which children would not receive if they refused to drink white milk.

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[1]"USDA, National School Lunch Program," Part 210 Regulations (Washington, D.C.: U.S. Government Printing Office, current, as of March 18, 1977), p. 9.

Exhibit 10.5

NUTRITIONAL ADEQUACY OF SCHOOL AND BAG/A LA CARTE LUNCHES

	Calories	Protein	Fat	Calcium	Iron	Sodium	Vitamin A	Riboflavin	Vitamin C
School Lunches									
Elementary Age 7-10 Regular Lunch									
2% white milk	-	X	X	X	X	+	+	X	X
chocolate milk	X	X	X	X	X	+	+	X	X
without milk	-	X	X	-	X	+	+	-	X
Elementary Age 7-10 Alternate Lunch									
2% white milk	-	X	X	X	X	+	+	X	X
chocolate milk	-	X	X	X	X	+	+	X	X
without milk	-	X	X	X	X	+	+	-	X
Elementary Age 11-14 Females-Regular Lunch									
2% white milk	X	X	X	X	-	X	+	X	X
chocolate milk	X	X	X	X	-	X	+	X	X
without milk	-	X	X	-	-	X	+	X	X
Elementary Age 11-14 Males-Regular Lunch									
2% white milk	-	X	X	X	-	X	X	X	X
chocolate milk	-	X	X	X	-	X	X	X	X
without milk	-	X	X	-	-	X	X	-	X
Elementary Age 11-14 Females-Alternate Lunch									
2% white milk	X	X	X	X	-	+	X	X	X
chocolate milk	X	X	X	X	-	+	X	X	X
without milk	-	X	X	-	-	+	X	-	X
Elementary Age 11-14 Males-Alternate Lunch									
2% white milk	-	X	X	X	-	+	X	X	X
chocolate milk	-	X	X	X	-	+	X	X	X
without milk	-	X	X	-	-	+	X	-	X
Secondary Females Regular Lunch									
2% white milk	X	X	X	X	-	X	+	X	X
chocolate milk	X	X	X	X	-	+	+	X	X
without milk	X	X	X	-	-	X	X	X	X

Exhibit 10.5 (cont'd.)

	Calories	Protein	Fat	Calcium	Iron	Sodium	Vitamin A	Riboflavin	Vitamin C
Secondary Males									
Regular Lunch									
2% white milk	X	X	X	X	-	X	X	X	X
chocolate milk	X	X	X	X	-	+	X	X	X
without milk	X	X	X	-	-	X	X	X	X
Secondary Females									
Alternate Lunch									
2% white milk	X	X	X	X	-	+	+	X	X
chocolate milk	X	X	X	X	-	+	+	X	X
without milk	X	X	X	-	-	+	+	X	X
Secondary Males									
Alternate Lunch									
2% white milk	X	X	X	X	-	+	X	X	X
chocolate milk	X	X	X	X	-	+	X	X	X
without milk	-	X	X	-	-	+	X	-	X
Bag/A la Carte Lunch									
Age 7-10	X	X	X	X	X	+	X	X	X
Age 11-14-Females	X	X	X	-	-	X	X	X	X
Age 11-14-Males	-	X	X	-	-	X	-	X	X
Secondary Females	X	X	X	X	X	X	+	X	X
Secondary Males	X	X	X	X	X	X	X	X	X

KEY
X = within designated range
+ = above designated range
- = below designated range

Findings for each nutrient were as follows:

1. Calories were found to be below the designated range for most (72 percent) of the elementary school groups but within the designated range in all the secondary school groups. Thirteen of the 18 elementary groups showed below the designated range quantities of calories. One reason for the difference between elementary and secondary is the secondary school lunch menus frequently included a cooked dessert, e.g., cake or applecrisp which increases calories. Elementary school menus, however, frequently listed fresh fruits as the dessert (and fruit/vegetable meal component) which are lower in calories than the cooked dessert.

2. Protein was found to be within the designated range in all lunch groups (school, bag, and a la carte). Most of the protein was supplied by high quality, animal protein.

3. Fats also were found to be within the designated range in all lunch groups.

4. Calcium was found to be within the designated range in all elementary lunch groups that included milk and low in all but one of these groups served without milk. Similar results were recorded at the secondary level: when milk was served, calcium was within the designated range. For the bag/a la carte lunch groups calcium was within the designated range for three of the groups; only ages 11-14 for both males and females were low in calcium.

5. Iron was below the designated range for school lunch menus for ages 11-18; sometimes as low as 65 percent of one-third the RDA. Iron was also below the designated range in the bag/a la carte lunches for the 11 to 14 year olds. Iron is one of the most difficult nutrients to get in sufficient amounts in the American diet. Therefore, the school lunch program may need to take special care in planning menus that provide a good source of iron every day to provide a weekly average intake equal to one-third of the RDA.

6. Sodium was above the designated range for many of the groups for school and bag/a la carte menus. For elementary students in the 7-10 age group, both the regular and alternate lunch menus were above the designated range in sodium. For both males and females in the 11-14 age group regular lunch menus were within the designated range while the alternate lunch menus were above the designated range. At the secondary level, most (67 percent) of regular and alternate lunch groups were above the designated range and 33 percent were within the designated range in sodium. Only one of the five bag lunch or a la carte groups was above the designated range in sodium.

   Considerable sodium (+200 mg.) was contributed in school lunch menus by canned vegetables, cheese, breads, tomato sauces, salad dressing, pickles, canned soup, luncheon meat, cake, pizza, fish, potato salad, and crackers. However, all of these foods, except pickles and salad dressing, also contribute significant amounts of other nutrients. As these individual food items add high levels of sodium to the meal, menu planning must take this into account and avoid serving these

food items in combination with each other. For bag/a la carte lunches, considerable sodium (+200 mg.) was contributed by luncheon meat, bread, potato chips, cakes, peanut butter, pretzels, cheese, pickles, french fries, salad dressing, and pizza. All these foods, except salt snacks (potato chips, pretzels), salad dressing, and pickles, also contribute significant amounts of other nutrients.

7. Nearly half of the school menus provided more than 200 percent of the RDA for Vitamin A. While this is technically considered above the designated range, Vitamin A is not known to be toxic when provided by food in usual amounts,(e.g., excessive consumption of carrot juice may prove harmful; however, eating carrots has not been shown to be detrimental to health). However, it is toxic when provided by massive doses of supplements. Furthermore, these menus were taken from the autumn cycle when fresh fruits and vegetables high in Vitamin A, e.g., canteloupe, carrots, and spinach were readily available, inexpensive, and, therefore, served frequently in the school lunch. It is possible that excessive Vitamin A may not be found at other times of the year.

Exhibit 10.6

AVERAGE NUMBER (OVER 5 DAYS) OF FOODS WITH SUGAR ADDED

Menu	Number of Foods with Sugar Added Per Day
Elementary Regular -	
2% white milk	.2
chocolate milk	1.4
without milk	.2
Elementary Alternate -	
2% white milk	.2
chocolate milk	1.4
without milk	.2
Secondary Regular	
2% white milk	1
chocolate milk	2
without milk	1
Secondary Alternate	
2% white milk	.8
chocolate milk	1.8
without milk	.8
Elementary bag	1.8
Secondary bag/a la carte	1

8. Riboflavin was within designated range for all school lunches when milk was consumed with the lunch and within designated range for all five bag/a la carte lunch groups.

9. All lunch menus and bag/a la carte groups were found to contain adequate amounts of Vitamin C.

10. Exhibit 10.6 shows the average number of times sugar was added to foods. Overall, for all types and levels of lunches, sugar does not appear to be supplied in very large amounts. For example, for elementary school lunches where students choose white milk, sugar was added to only one food in five days of menus (1/5 = .2).

Consumption of Various Types of Food

Based on the data collected on what foods students throw away (see Chapter 9) this section indicates what types of food students are getting when they eat the school lunch, alternate school lunch, lunch from home or an a la carte lunch. The questions asked were "What percent of the students eat lunches with a meat/protein item?," What percent eat lunches with a bread item?," etc. Students were considered to have had a given food group in their lunch if they ate at least one-half of a serving of any food in that group. Conversely, students who ate more or less than half a serving from a good group were counted as not having any food from that food group. For instance, a student who ate none of the vegetables from the school lunch and a student who brought a lunch from home without a vegetable were both counted as not having had a vegetable in their lunch.

Exhibit 10.7 shows the percentage of students (by sex) who ate at least one-half serving of a food from the food categories listed. Results are presented separately for each type of lunch. Specific findings are the following:

- Students who bought the school lunch or brought a lunch from home, the overwhelming majority ate at least one-half a serving of a meat/protein food and a bread food. This was not true for students who bought a la carte lunches.

- The percentage of students for both males and females who ate half a serving of a food type were generally higher for school lunches than lunches brought from home and a la carte lunches. This was particularly true for vegetables. Not counting french fries or tater rounds, 28 percent of the males who bought the school lunch ate half a serving of a vegetable compared to only 8 percent of the males who brought lunch from home and 7 percent who bought it a la carte. The only exception was for salt snacks where significantly more students who brought lunch from home and who bought a la carte ate half a serving. As salt snacks are not served with the school lunch, students must have bought them as a la carte items and eaten them with the school lunch.

Exhibit 10.7

CONSUMPTION BY FOOD CATEGORIES:
TYPE OF LUNCH AND SEX

Food Category	Regular or Alternate School Lunch		Lunch From Home		A la Carte	
	Male N=1843	Female N=1793	Male N=960	Female N=1167	Male M=77	Female M=90
Meat/Protein (Milk excluded)	90	86	86	87	52	34
(Milk included)	98	97	88	90	52	34
Bread	85	81	84	82	44	38
Vegetable (Tater Rounds and French Fries excluded)	28	27	8	9	7	13
Fruit	49	47	40	45	23	29
Fruit or Vegetable (Tater Rounds and French Fries excluded)	65	63	45	50	29	39
Beverage (includes milk)	86	81	57	54	48	59
White or Chocolate Milk	84	77	46	39	35	38
Dessert	51	52	65	67	60	51
Salt Snack	3	5	42	43	17	22

Note: Exhibit entries are percentage of N who consumed at least .5 serving or more of a food category. For example, of the 1843 school lunches for males observed, over .5 serving of protein was eaten in 90 percent of them.

- The findings for milk show that roughly 60 percent of those students who brought lunch from home or bought it a la carte did not drink half a serving of milk with their lunch. Only 20 percent of students with the school lunch did not. Furthermore, the findings for the beverage category which includes milk show that many students who brought lunch from home or bought it a la carte drank no beverage of any kind with their lunch. Beverage other than milk are not generally sold with the school lunch and a beverage other than milk did not get the beverage with the school lunch.

- The percentage of students who ate half a serving were only slightly higher for males than for females for most food groups for the school lunch. However, for lunches brought from home, slightly more females than males ate half of a serving for several of the food categories. The biggest difference between males and females was for meat/protein category for students who purchased an a la carte lunch. Fifty percent of the males ate half a serving of a meat/protein food while only 34 percent of the females did.

Exhibit 10.8 presents the grade level data for students who ate half of a serving of the various foods. The specific findings are the following:

- The percentage of students increased with grade level for the regular or alternate lunch for some goods. Generally, more students in the upper grades ate half a serving for the meat/protein, bread, vegetable and dessert categories.

- With few exceptions, grade had little effect on the percentage of students who eat food from the various categories for lunch brought from home. For vegetables, the percentage of students although low did increase with grade. The percentages for beverages decreased with grade.

- No consistent grade level trends were seen for a la carte lunches.

Exhibit 10.8

CONSUMPTION BY FOOD CATEGORIES, TYPES OF LUNCH, AND GRADE

		Regular or Alternate School Lunch					Lunch From Home				A la Carte	
	Grade	1	3	5	7	10	3	5	7	10	7	10
Food Category	N=	502	1169	1219	612	129	814	974	247	85	68	64
Meat/Protein (milk excluded)		83	87	91	86	95	87	86	87	84	34	28
(milk included)		100	98	99	92	99	91	89	88	85	34	28
Bread		78	85	85	78	90	83	83	88	82	34	30
Vegetable (Tater Rounds and French Fries excluded)		21	26	27	30	56	8	9	10	18	5	16
Fruit		53	55	50	33	29	41	42	41	79	15	25
Fruit or Vegetable (Tater Rounds and French Fries excluded)		63	68	64	56	69	46	47	47	85	20	38
Beverage		85	84	85	77	85	62	56	40	29	50	52
White or Chocolate Milk		85	82	84	70	82	43	45	35	21	34	30
Dessert		37	42	36	70	52	63	67	71	52	68	31
Salt Snack		0	2	6	8	6	34	49	41	34	14	20

Note: Table entries are percentage of N who consumed at least .5 serving or more of a food category. For example, of the 507 school lunches for Grade 1 observed, over .5 serving of protein was eaten in 83 percent of them.

Balance of Foods in the Student Lunches

In addition to learning what foods student ate, the study also sought to learn whether students ate balanced meals. As mentioned earlier in the chapter, federal regulations require that the school lunch contain one serving of meat, bread, milk and two servings of vegetables. A measure was constructed to learn how close the lunch the students ate came to this standard. This measure, the "balance index" was constructed by (1) adding the actual quantity consumed of each food up to a maximum of one serving for meat, bread and milk, and two for fruits/vegetables, and (2) dividing each child's sum by 5 (the maximum score) to produce a range from 0 to 1. The higher the index (the close to 1) the more balanced the meal consumed and the closer it was to the federal standard. The data collection procedures for coding what children ate were described in Chapter 9.

Exhibit 10.9 presents the average balance index by sex within grade for each type of lunch. The specific conclusions obtained from the data are the following:

- For all grade levels, both regular and alternate school lunches eaten had a significantly higher balance index than lunches brought from home. For all grades as a group, the balance index for the school lunch was .67 as compared to .50 for lunches from home. As noted previously, there were few vegetables in lunches brought from home which could account for the difference.

- Except for Grade 7, the balance index for the school lunch increased with increasing grade level. The index was .62 for Grade 1 and increased to .78 for Grade 10.

- For the school lunch, the balance index was higher for males than females at every grade level. The difference between the balance indexes of males and females increased with grade. For lunch brought from home, there was no difference in the index by sex.

- A la carte meals consistently showed a significantly lower balance index than did either bag lunches or school lunches. The index for a la carte lunch was less than half that of the regular or alternate school lunch at both grade levels (7 and 10). This is a reflection of the lack of fruits and vegetables in lunches purchased a la carte.

Reported Consumption of Selected Foods

Over the years parents have frequently expressed concern for the amount of certain food substances that their children receive in the school lunch program. To assist in addressing this concern, students and parents were asked to what extent they/their children eat foods which were high in selected substances such as salt, sugar, artificial food coloring, and preservatives. Exhibit 10.10 shows the percentage (by grade) of students and parents who indicated "all-the-time" or "sometime" consumption of selected food types.

Exhibit 10.9

BALANCE INDEX BY
TYPE OF LUNCH, GRADE, AND SEX

	Regular or Alternate School Lunch	Lunch From Home	A la Carte
Grade 1	.62 (n=507)		
Male	.63 (n=272)		
Female	.61 (n=235)		
Grade 3	.67 (n=1169)	.49 (n=814)	
Male	.70 (n=609)	.51 (n=379	
Female	.64 (n=560)	.47 (n=935)	
Grade 5	.70 (n=1219)	.51 (n=974)	
Male	.72 (n=620)	.51 (n=445)	
Female	.67 (n=599)	.51 (n=529)	
Grade 7	.62 (n=612)	.48 (n=247)	.30 (n=68)
Male	.67 (n=268)	.49 (n=101)	.31 (n=35)
Female	.58 (n=344)	.48 (n=146)	.29 (n=33)
Grade 10	.78 (n=129)	.58 (n=85)	.28 (n=64)
Male	.82 (n=74)	.57 (n=29)	.30 (n=21)
Female	.72 (n=55)	.58 (n=56)	.27 (n=43)
All Grades	.67 (n=3638)	.50 (n=2128)	.33 (n=167)
Male	.70 (n=1845)	.51 (n=961)	.35 (n=77)
Female	.64 (n=1793)	.50 (n=1167)	.31 (n=90)

Note: Table entries are average balance index for group. See text for explanation of computation of the index.

The overall results depicted in Exhibit 10.10 are that

- o Parents and students are in general agreement that students "sometimes" or "all the time" eat foods which are high in salt, high in sugar, deep-fat-fried, and contain artificial coloring and preservatives.

- o There is no difference by grade.

- o Few parents or students were "not sure" of their response.

A majority of students in each of the four grade groups (60 to 84 percent) indicated that they "sometimes" or "all the time" eat foods in all of the selected food groups. With only a single exception, a majority of parents in each of the three grade groups (54 to 86 percent) indicated that their children ate the selected food types "sometimes" or "all the time." The single exception was parents of third graders, where only 47 percent said their children "sometimes" or "all the time" eat food containing articifial food coloring. Although an important issue, no data were available which indicate the levels parents are willing to accept of these foods.

This item was included in the student and parent surveys to determine what proportion of students and parents were excluding or severely limiting their intake of certain controversial food items. If a sizeable portion were, the school lunch would not be responsive to the needs of this portion by serving the controversial foods. The data, however, indicate that consumption of all items is widespread. Since the data represent students and parents reporting on theoretical eating habits rather than actual consumption and since people may be inclined to describe their eating habits in the most nutritionally favorable light, consumption may actually be more widespread than the data indicate.

Alternative Meals

The issue addressed by this section is the extent to which MCPS is offering alternative lunches, e.g., Feingold, low sodium, low calorie or ethnic/religious Although some flexibility is allowed for serving such alternative lunches, some restrictions are imposed because of regulations necessary for MCPS to receive federal reimbursements. For example, Feingold and low sodium lunches are not offered by MCPS Food Services. In those elementary and secondary schools where meal choices are offered, it is possible for students to select low calorie lunches such as the salad bar. Cafeteria managers reported that ethnic lunches are occasionally prepared by individual cafererias at the request of the principal or teachers. Cafeteria managers also reported that, if some children require exceptions to be made to the meal offered, efforts are made to accommodate their needs, e.g., special preparations may be made for a child with a severe renal problem.

Food Services administratores reported that individual requests for serving ethnic or religious meals under specific circumstances are frequently granted by Food Services. In response to requests for Feingold meals, Food Services conducted, under controlled conditions, a pilot test of Feingold meals in one school. The results of the pilot found Feingold meals to (1) be very restrictive in food choices, (2) be very labor intensive in preparation, and

Exhibit 10.10

STUDENT FREQUENCY OF EATING SELECTED FOOD ITEMS AS REPORTED BY PARENTS AND STUDENTS*

Do you/Does your child eat foods that:		Grade 4	Grade 6	Grade 8	Grade 11	Grade 3	Grade 5	Grade 7/10
		STUDENTS				PARENTS		
	N =	663	575	606	453			
Are high in salt								
All the time or sometime		64	74	78	78	68	79	78
Not sure		16	10	4	1	1	1	1
Are high in sugar								
All the time or sometime		77	83	84	81	81	86	84
Not sure		3	1	1	1	0	1	0
Are deep fat fried								
All the time or sometime		76	77	84	77	57	69	70
Not sure		3	2	1	0	0	1	0
Contain artificial food coloring								
All the time or sometime		-	60	65	72	47	58	54
Not sure		-	6	4	2	1	1	1
Contain artificial preservatives								
All the time or sometime		-	67	71	76	63	76	78
Not sure		-	11	6	4	1	1	4

*Table entries are percent of respondents who checked the answer choice.

(3) have low participation rates. More alternatives might be possible if managers were better trained to make necessary modifications to menus. However, the number of modifications requested makes it impossible for Food Services to assure that all alternatives meet nutritional requirements and maintain control over food served throughout MCPS. Nineteen of the cafeteria manager/satellite workers sampled currently offer, or plan to offer, to students types of lunches other than the regular meal pattern. Specifically mentioned were soup and sandwich lunches, salads, ethnic foods, or a la carte items. Ethnic lunches are generally offered occasionally or less than once a month. Special diets are served by some cafeteria managers if they are requested.

Implications of the Findings

The results of the nutrition analysis showed that, although none of the school lunch menu types (by age group and sex) met all of the one-third RDA requirements for all nutrients, menus were of high nutritional value. The regular and alternative elementary lunch menus (with milk) for 7-10 year olds met all RDA requirements and NRC recommendations, except for calories. The remainder of the elementary lunch menu types were below the designated range in some combination of calories and iron. The elementary school a la carte program is designed to increase calorie intake for those students who require higher levels of carlories. Iron was below the designated range in most lunch menu types except elementary lunch menus for ages 7-10. All secondary school lunch menu types (with milk) met all the RDA requirements with the single exception of iron. The hypothetical bag lunch brought from home for students in the 7-10 age group met all of the RDA nutrient requirements and NRC guidelines. The bag lunch for both male and female secondary students also met all of the RDA nutrient requirements and NRC guidelines.

Although no regular school lunch menu met all the RDA nutrient requirements, the lunch menus met more nutrient requirements than the Government Accounting Office (GAO) found in a recent study of seven school districts around the country. The GAO report[1] indicated that none of the secondary school lunch formats tested in the seven school districts met all the RDA nutrient requirements, and all were inadequate in at least two areas. The most common inadequacy was with iron and Vitamin C. The report went on to say that:

> Upgrading the lunches' nutritional quality to meet all the goals may be difficult and may not be feasible in all cases because attempts to improve nutrition may adversely affect participation, cost, and plate waste.
> Nevertheless, if Agriculture believes that meeting a specified RDA goal is important, it needs to take steps to ensure that the goal is met without unacceptable impacts on plate waste, cost, and student participation. If not, Agriculture should make clear that there is no specified RDA goal and that school lunches may, in fact, not be providing the amount of nutrients previously assumed.

[1]GAO Report to Congress, Efforts to Improve School Lunch Programs--Are They Paying Off?, September 9, 1981.

The data on what students in MCPS actually eat pointed to a signficant problem in the poor consumption of fruits and vegetables. This could be partly due to how these items are prepared and/or served but it could also be due to children's attitudes toward these particular foods. While students who bought the school lunch from home or bought an a la carte lunch ate any at all. The data for fruit are somewhat better but still show the same pattern. Allowing children to choose three of the five components (Offer vs. Serve) will reduce waste but it will not help in getting children to eat vegetables and fruits which are necessary from a nutritional standpoint.

Recommendations

- Methods should be explored to increase the level of calorie content in elementary school lunches and iron in all lunch types.

- Emphasis should be given to nutrition education programs as a means of improving students' eating habits.

CHAPTER 11 SUMMARY

ALTERNATIVE FOOD PREPARATION AND DELIVERY SYSTEMS

Most school districts, like MCPS, have concentrated on balancing the benefits and costs of two types of delivery systems (1) on-site preparation and delivery of meals for students within a given building and (2) one of several types of satellite arrangements where food is prepared either in bulk or in prepackaged form and transported to a group of schools for serving. In MCPS, central kitchens are used to prepare prepackaged meals for distribution to satellite elementary schools. Schools receiving prepackaged meals reconstitute the frozen hot pack by heating and serving with the fresh cold pack. MCPS has for years been a leader in the development and use of the prepackaged satellite delivery systems. Visits to central kitchens have shown them to be smooth, efficient operations. They are generally well-designed and make effective use of mechanical equipment for both the cooking of food and the assembly of the hot and cold packs. All five central kitchens are currently operating at less than full capacity.

The study found that the per meal cost to serve the 1.5 million satellite meals was roughly two cents less per meal than the 2.7 million on-site meals ($1.1791 vs. $1.1973). Although both food and supplies are more expensive for satellite meals, the significantly lower labor costs more than make up the difference. Labor costs are lower for satellite meals because of the economies of scale associated with central preparation of meals and the lower level positions assigned to satellite schools.

Another approach to comparing the cost of the two types of delivery systems is to project the total profit(loss) to MCPS if all elementary schools operated under one of the two systems. Under an arrangement of all on-site kitchens, it is projected that MCPS would have lost slightly less than $.04 per meal or $153,276 in FY 1981. In a similar fashion costs were projected with the scenario that all elementary schools had been converted to satellite operation. Under such an arrangement, significant labor savings occur which reduce the cost per meal by slightly less than $.20 ($0.1937 per meal). This lower cost per meal would have projected a profit of $821,905 in FY 1981. Thus, although the cost difference per meal of satellite vs. on-site meals is currently $.02, economies of scale increase the savings to almost $.20 per meal if all elementary schools were converted to satellite operation.

In general, students and parents from both on-site and satellite schools showed positive attitudes toward the school lunch program. Parents with children in schools with on-site cafeterias showed no significant attitude differences than parents whose children attended schools with satellite cafeteria operations. Students from schools with on-site kitchens, however, showed a more positive attitude toward the school lunch program than did students from schools with satellite kitchens.

In general, the attitudes of teachers in schools with on-site kitchens are more positive than teachers in schools with satellite kitchens. Teachers at on-site schools felt somewhat more positive about the food served to students and the cafeteria environment than did teachers in satellite schools.

Data indicated that principals from schools with on-site kitchens have slightly more positive attitudes toward the school lunch program than do principals from schools with satellite kitchens. The difference, however, was not as great as that shown for teachers.

An overall attitude score was computed for each respondent by giving points for the degree of agreement/disagreement for each positive and negative statement. Attitude score data generally confirms earlier findings that (1) parents had a more positive attitude toward the school lunch program than do students, (2) principals, likewise, had a more positive attitude than do teachers, and (3) all groups from on-site schools had a slightly more positive attitude than their counterparts from satellite schools.

Plate waste data were analyzed by type of delivery system, and significant consumption differences between on-site and satellite kitchens were found in 17 of the 49 individual food items (34 percent). All differences showed greater consumption for the on-site schools. Conversely, there was no significant difference in plate waste between on-site and satellite schools for 32 of the 49 items (64 percent). The nutrition index for all three grades was slightly higher in on-site schools than in satellite schools. There was an increase in the nutrition index with increasing grade in both satellite and on-site schools.

The overall finding is that the MCPS prepackaged satellite delivery system is the most cost effective method currently available for serving lunch in elementary schools. It has been projected that the conversion of all elementary schools to satellite operation in FY 1981 would have saved approximately $822,000 over the present arrangement of 75 on-site and 56 satellite elementary schools. The question to be addressed is whether the cost savings to be obtained from satellite operation is worth some modest loss in positive attitude toward the school lunch program. Conversion of on-site kitchens to satellite operation can be accomplished with little physical modification. It should be noted the present five central kitchens are currently underutilized and could accommodate an all-satellite operation. In anticipation of the possible switch to all-satellite elementary school kitchens, steps should be taken now to address the problem of surplus on-site cafeteria managers which will develop from both the closure of on-site schools and the conversion to satellite operation.

Recommendations

- MCPS should convert all existing elementary school on-site kitchens to satellite operation over the next few years.
- A detailed study should be conducted of the capabilities, costs, and alternative central kitchen configurations to serve the expanded number of satellite kitchens.

- If all elementary schools are converted to satellite operation, then the three field supervisor positions and the product and systems supervisor position should be converted to:

  - A supervisor of central kitchens who would have direct responsibility for supervision of all central kitchens and 30 elementary satellite schools

  - A supervisor of elementary satellite schools who would have responsibility for supervision of the remaining 72 elementary satellite schools

  - A supervisor of middle and junior high schools who would have responsibility for the 24 middle, junior high schools

  - A supervisor of senior high schools who would have responsibility for the 22 senior high schools

- One of the three satellite quality control assistants should be assigned to the central kitchens supervisor and the other two to the elementary school satellite supervisor.

- If the number of satellite schools in operation in FY 1983 is reduced from present numbers by school closings, then central kitchens operations should be consolidated. In such a situation, the two central kitchens without cooking facilities should be closed.

- Cost accounting data should be collected, and the cost to prepare frozen hot packs should be accurately calculated and compared to the cost of purchasing hot packs from commercial vendors.

- The school system should give consideration to the conversion of at least some middle and junior high school on-site kitchens to satellite operation once all elementary schools are operating efficiently under satellite.

- Ways should be explored to improve the quality and acceptance of satellite meals to increase satisfaction levels. This may require an education outreach program to alter perceptions of the satellite operation, rather than solely changes in food preparation and delivery.

CHAPTER 11

ALTERNATIVE FOOD PREPARATION AND DELIVERY SYSTEMS

Introduction

Throughout the report, numerous references are made to comparisons of on-site and satellite cafeteria operations. Whereas previous chapters have discussed individual topics, e.g., management, costs, plate waste, attitudes, etc., and their overall effect on the school lunch program, this chapter is intended to address many of these same issues but only as they relate to alternative preparation and delivery systems, and specifically to on-site vs. satellite.

Over the past decade, school districts across the country have experimented with various types of alternative food preparation and delivery systems. Most school districts, like MCPS, have concentrated on balancing the benefits and costs of two types of systems (1) on-site preparation and delivery of meals for students within a given building and (2) one of several types of satellite arrangements where food is prepared either in bulk or in prepackaged form and transported to a group of schools for serving. In MCPS, central kitchens are used to prepare prepackaged meals for distribution to satellite elementary schools. Schools receiving prepackaged meals normally have kitchen facilities capable only of heating and serving such meals. The conversion of MCPS elementary school cafeterias from on-site to satellite operation has received considerable scrutiny from community groups. Consequently, the primary objectives of this chapter are to (1) identify the differences between these two systems with regard to cost/profit, plate waste, and acceptability, (2) describe past criteria used to convert elementary on-site kitchens to satellite, (3) investigate other types of satellite feeding systems, and (4) explore future MCPS options for delivery systems.

Description of Alternative Satellite Delivery Systems

Bulk Satellite System

A popular type of satellite delivery system in other Maryland school systems and across the country is call "bulk satelliting." Food is cooked in a preparing school and transported to receiving schools in special bulk heat retaining containers. Preparing schools are usually junior or senior high schools which prepare the hot portion of the lunch for up to one to three satellite elementary schools. The cold portion of the lunch is usually prepared at the satellite school. The satellite school receives the hot component of the meal ready to portion and serve. Items which are difficult to transport hot and still retain their quality and/or appeal are usually cooked at the satellite school. Such items include grilled cheese sandwiches, pizza, and french fries. Parents, citizens, or cafeteria workers are hired as independent contractors to transport the bulk containers in their private cars, station wagons, or vans.

This type of delivery system reduces the amount of duplication in equipment and labor necessary to cook the hot portion of the meal. From the consumers' (students') points of view, the meal received in a bulk satellite school is, theoretically at least, exactly the same as the meal served in the preparing

school. The inherent problems of this system are (1) maintaining the temperature and appeal of the transported hot portion, (2) portion control and waste associated with bulk shipment, and (3) the labor at the satellite school necessary to prepare and serve the rest of the meal.

Prepackaged Satellite System

This system consists of one or more central kitchens that prepare prepackaged meals which are delivered daily to satellite schools by truck. Central kitchens use specialized equipment and labor to cook, preportion, package and freeze the hot portion of the meal. The cold portion is likewise prepackaged but not frozen. Meals are transported to satellite schools where the hot packs are reconstituted in convection ovens and served with fresh cold packs. Satellite schools have considerably less staffing than either central or on-site kitchens.

Several variations to the prepackaged satellite systems exist. For example, a school system could purchase the frozen hot pack from an outside vendor and assemble only the cold pack in the central kitchen. Whatever the variation, the primary objective of prepackaged satellite systems is to centralize the preparation of meals and reduce the cost of labor in individual schools.

Satellite Delivery Systems in Other Maryland School Systems

Five large public school systems in Maryland that use some form of elementary satellite delivery system were either visited or surveyed via telephone.[1] Four of the five districts use bulk satelliting exclusively at the elementary level. Baltimore City uses the bulk satellite system in approximately a third of its elementary schools, on-site kitchens in a third, and one of two different prepackaged purchased satellite systems in the remaining schools. The five bulk satellite systems are basically the same with a "preparing or base school," usually a secondary school, preparing hot bulk meals for one to three "receiving satellite" schools. In Prince George's County, however, 72 on-site elementary schools prepare meals for other elementary satellite schools. In all cases, hot meals are transported via independent contractors in their own vehicles. Delivery fees range between $4.50-$5.00 per school per round trip. The amount of staff in a satellite school varies by county and the number of meals served but ranges from 10 person-hours per day (one 4-hour manager and two 3-hour workers) to 18 person-hours per day (one 6-hour manager and two 6-hour workers) in a typical satellite school.

The Baltimore City public school system uses four different types of food service programs in elementary schools: on-site, bulk satellite, self-contained preplate, and satellite preplate. On-site kitchens prepare and serve meals for only the students in that school. Balitmore City's bulk satellite program is operated in much the same way as others described above. Their two prepackaged delivery systems, however, are unique in that they purchase frozen hot packs from commercial vendors. The self-contained preplate (preplate as used by Baltimore City is the same as prepackaged)

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[1]The five school systems are Anne Arundel, Howard, Baltimore County, Prince George's, and Baltimore City.

elementary schools have convection ovens, freezers, and refrigerators and receive weekly shipments of frozen hot packs. Individual schools prepare the other components (equivalent to the cold pack) and serve it directly to children with the heated hot packs. Although labor and equipment is saved from the use of the frozen hot pack, decentralized labor in each school is required for the preparation of the other components of the meal. Satellite preplate schools, on the other hand, have no oven, freezer, or refrigerator. Assembled cold packs and frozen hot packs heated at a preparing school are shipped daily to the preplate satellite school and served directly to children. Although efforts are being made to eliminate this type of delivery system, the Baltimore City school system has 15 schools currently being served in this way.

Frozen hot packs for both of these delivery systems are purchased by Baltimore City from commercial vendors who deliver them monthly to a central warehouse. The school system uses refrigerated trucks to make weekly deliveries to schools from the warehouse. Mass Feeding, a Chicago-based firm, has the current contract for the 19 different preplated frozen hot packs, charging between $.4065 and $.5785 per unit. For the 1981-82 school year, Baltimore City received only two responses to the invitation to bid and only Mass Feeding bid on the complete range of hot packs.

Decription of MCPS Satellite System

MCPS has for years been a leader in the development and use of the prepackaged satellite delivery system. In FY 1980 there were four central kitchens which prepared and/or assembled the food served in satellite schools. A fifth central kitchen began operation in September, 1981. Complete central kitchens are currently located in Sherwood Elementary School, Takoma Park Elementary School and Martin Luther King Junior High School. These three kitchens have the facilities to cook, bake, prepare cold pack foods, and assemble both hot and cold packs. The central kitchens located at Fallsmead and Pleasant View Elementary Schools do not have cooking facilities. Hot pack foods are cooked for them in one of the other three central kitchens and transported to them in bulk for assembly. Fallsmead and Pleasant View central kitchens are the same as the other central kitchens in all other respects. Each central kitchen prepares meals for 5 to 15 satellite schools. Each morning satellite schools phone in the lunch count for that day to the central kitchen. Daily the central kitchen ships to each satellite school approximately 90 percent of the frozen hot packs required for the next day, the exact number of cold packs required for that day, and the exact number of additional hot packs required for that day. This procedure all but eliminates the overages experienced in bulk satellite systems.

Visits to central kitchens have shown them to be smooth, efficient operations. They are generally well-designed and make effective use of mechanical equipment for both the cooking of food and the assembly of the hot and cold packs. However, all five central kitchens are currently operating at less than full capacity.

Satellite kitchens reconstitute the frozen hot packs by heating in a convection oven and serving them with the cold pack. Satellite schools are typically staffed with one 4-hour satellite worker.

Decision to Convert to Satellite Operation

Introduction of Satellites

The original requirement for the satellite kitchen concept was generated in 1966 when a number of elementary schools were built without kitchen facilities. In that year, 12 schools received full satellite meal service and 3 schools had milk only service. Satellite schools originally used frozen hot packs and cold packs which were purchased from commercial vendors. MCPS began preparing the cold pack during the second year of operation and, as dissatisfaction with the purchased hot packs increased, began preparing hot packs with the opening of the Sherwood Central Kitchen. Exhibit 11.1 shows the growth of satellite schools from that time to the present. While kitchen facilities remained an important factor in the development of the satellite program, the Food Services fiscal crisis during 1968-1972 was critical in accelerating the expansion of satellite cafeteria operations. Schools identified as prime targets for conversion were those which were either operating at a financial deficit or had low participation rates.

Exhibit 11.1

NUMBER OF SATELLITE AND ON-SITE ELEMENTARY CAFETERIAS
FY 1966 - FY 1981

Fiscal Year	Satellite	On-Site
1966	12	103
1972	11	105
1973	37	107
1974	46	98
1975	57	87
1976	62	85
1977	60	82
1978	57	81
1979	56	79
1980	59	75
1981	56	75

Results of Conversion to Satellite

As reported to the Board of Education in January, 1978, significant overall gains were realized by 1978 from the introduction and conversion of elementary schools to satellite operation.[1] Between FY 1970 and FY 1977, the number of Full-Time-Equivalent (FTE) Food Services positions was reduced by 181 (24.7 percent). Although hourly rates rose significantly during this period, the profit/loss status of cafeteria operations increased steadily from a 3.7 percent loss in FY 1970 to a 6.4 percent profit in FY 1977. It seems safe to say that the cost reductions projected for satellites were realized during this period of time.

[1] Progress Report of School Food Service Program memorandum to Board of Education, January 12, 1978.

Per Meal Cost Differences

Exhibit 11.2 displays the number of student lunches and breakfasts sold by school type for FY 1981. Food Services calculates total meals sold by using a formula where two breakfasts are equivalent to one lunch. These data were utilized in calculating the per meal costs shown in Exhibit 11.3. This exhibit indicates by type of school (on-site vs. satellite) per meal costs by expense type and the percentage each expense represents of the total cost per meal. Actual cost data for the 1980-81 school year were used for the basis of the per meal calculations.

Exhibit 11.2

MEALS* SERVED AT ELEMENTARY LEVEL BY TYPE SCHOOL
FY 1981

Meals Served	On-Site	Satellite	Total
Lunches Sold	2,596,272	1,382,222	3,978,494
Breakfasts Sold	303,881	224,936	528,817
Total "Meals" Sold	2,748,213	1,494,690	4,242,903

*Two breakfasts

Exhibit 11.3 shows that the per meal cost to serve the 1.5 million satellite meals was $.018 less per meal than the 2.7 million on-site meals ($1.1791 vs. $1.1973). Although both food and supplies are more expensive for satellite meals, the significantly lower labor costs more than make up the difference. Food represented 47.1 percent of the total per meal cost of satellite meals, while only 43.7 percent of on-site meals. The difference is due to inherent limitations in the types of food which can be purchased for the satellite program. Likewise, supplies and materials accounted for 7.1 percent of the total costs for satellite meals as compared to 4.3 percent for on-site meals. The cost of disposable paper products and packaging materials associated with prepackaged satellite meals is the cause for this difference. However, labor costs were 6.2 percent lower for satellite meals. Labor costs are lower for satellite meals because of the economies of scale associated with central preparation of meals and the lower level positions assigned to satellite schools.

Exhibit 11.3

COSTS PER MEAL* SERVED AT ELEMENTARY LEVEL BY TYPE SCHOOL
FY 1981

Type Expense	On-Site Per Meal	On-Site Percentage of Total	Satellite Per Meal	Satellite Percentage of Total	Total Per Meal	Total Percentage of Total
Food	$.5234	43.7	$.5557	47.1	$.5348	44.9
Labor	.6207	51.8	.5376	45.6	.5914	49.7
Supplies and Materials	.0510	4.3	.0839	7.1	.0626	5.3
Other	.0022	0.2	.0017	0.1	.0020	0.2
Total	$1.1975	100.0	$1.1791	100.0	$1.1910	100.0

*Two breakfasts equate to 1 meal and 1 lunch equates to 1 meal.

Projected Profit (Loss) If All Elementary Schools Were Operated With On-Site Kitchens

The previous findings compared the actual cost per meal for meals sold from on-site and satellite schools in the 1980-81 school year. Another approach to comparing the cost of the two types of delivery systems is to project the total profit(loss) to MCPS if all elementary schools had operated under one of the two systems. Exhibit 11.4 shows the projected results if all elementary schools had operated with on-site kitchens in 1980-81. Computations of per meal costs were based on the following projections:

- Food--Actual food costs for the period September 1, 1980, to May 31, 1981, were used for existing on-site elementary schools. These same data were used to project food costs for current satellite schools.
- Labor--Actual labor costs were used for existing on-site elementary schools, and costs for current satellite schools were projected using estimated full-time-equivalent hours to staff on-site kitchens times the average daily rate for each position class. Fringe benefits costs of 27.3 percent were added for all estimated staffing.
- Supplies--The average cost per meal was calculated for existing on-site elementary schools and multiplied by the total number of meals served by both on-site and satellite schools.
- Other--This is actual other costs for existing elementary on-site schools plus the projected costs for satellite schools.

The cost per meal was calculated by dividing all costs by the number of lunches served plus half of the number of breakfasts served. The assumption is made that on a countywide basis differences in commodity usage; the number

Exhibit 11.4

PROJECTED PROFIT (LOSS) IF ALL ELEMENTARY SCHOOLS
WERE CONVERTED TO ON-SITE KITCHENS
FY 1981

	Total	Per Meal
Income	$5,019,732	$1.1831
Expenses		
Food	2,269,217	.5348
Labor	2,678,069	.6312
Supplies and Materials	216,388	.0510
Other	9,334	.0022
Total	$5,173,008	1.2192
Profit (Loss)	($ 153,276)	($0.0361)

of free and reduced price meals served; and the cost of energy, equipment, and transportation does not materially affect these calculations. The cost and/or feasibility of converting satellite kitchens to on-site kitchens was not considered at this preliminary stage. Under an arrangement of all on-site kitchens (and the same price per lunch), it is projected that MCPS would have lost slightly less than $.04 per meal or $153,276 in FY 1981. When the projected costs of Exhibit 11.4 are compared with the actual costs for on-site schools (Exhibit 11.3), all categories are the same except for labor. The per meal labor expense increased due to the ineffectiveness of operating small on-site kitchens.

Projected Profit (Loss) If All Elementary Schools Were Operated as Satellite Kitchens

The projections in Exhibit 11.5 were calculated using similar techniques as described above, except this time costs were projected with the scenario that all elementary schools had been converted to satellite operation and that the five existing central kitchens have the physical capacity to prepare all elementary level meals. Computations of per meal costs were based on the following projections:

- Food--This is the same as previously described.
- Labor--Actual labor costs were used for existing satellite schools and central kitchens. The additional central kitchen and satellite staff requirements estimated by the director of food services were priced at the average daily rate by position class plus 27.3 percent for fringe benefits.

- o Supplies—The average cost per meal was calculated for existing satellite schools and multiplied by the total number of meals served by both satellite and on-site schools.

- o Other--This is same as previously described.

Under such an arrangement significant labor savings occur which reduces the cost per meal by slightly less than $.20 ($0.1937 per meal). If the price charged per meal were kept the same, the lower cost per meal would have resulted in a profit of $821,905 in the 1980-81 school year. Although capital costs were not considered in these calculations, it is very conceivable that the removal of surplus kitchen equipment from schools with on-site kitchens and from closed schools would more than off-set the cost of converting schools to satellite operations. Surplus equipment might, in fact, generate an additional one-time savings.

Exhibit 11.5

PROJECTED PROFIT (LOSS) IF ALL ELEMENTARY SCHOOLS
WERE CONVERTED TO SATELLITE KITCHENS
FY 1981

	Total	Per Meal
Income	$5,019,732	$1.1831
Expenses		
Food	2,269,105	.5348
Labor	1,565,529	.3690
Supplies and Materials	355,980	.0839
Other	7,213	.0017
Total	$4,197,827	.9894
Profit (Loss)	$ 821,905	$0.1937

Elementary School Size vs. Satellite Operation

In the past, most of the elementary schools that were converted to satellite operation had either low student enrollments (or participation) or were for some other reason being operated at a financial loss. However, several of the largest elementary schools in the county are currently being served effectively by satellite operation. For example, Jackson Road Elementary School (September 30, 1981, enrollment of 526) is currently serving 230 satellite lunches per day with a staff of one 6-hour satellite worker and one 3-hour helper. Not only are labor savings still present in large satellite schools, but meals are served faster and with less requirement for kitchen space and range facilities. Current satellite operation demonstrates that, at least within the size of Montgomery County elementary schools, maximum school size should not prevent conversion to satellite operation.

Attitude Differences of Students and Parents

Exhibits 11.6 and 11.7 display in bar-graph format the percentage of students and parents, from both on-site and satellite schools, that "agreed very much" or "agreed" with the positive and negative statements about the school lunch program. In general, students and parents from both types of schools showed positive attitudes toward the school lunch program. Except for the response of students to the statement "the lunch is a good buy" (which has been discussed previously), more than 50 percent of all respondents agreed with the positive statements, and less than 50 percent agreed with the negative statements.

Parents with children in schools with on-site cafeterias showed no significant attitude differences from parents whose children attended schools with satellite cafeteria operations. Although on-site parents showed a slightly greater agreement with selected positively-worded statements, the differences were not significant; and there were no difference in parents agreement with the negatively-worded statements.

Students from schools with on-site kitchens, however, showed a more positive attitude toward the school lunch program than did students from schools with a satellite kitchen. Seventy percent of on-site students agreed with the statement that "the food tastes good most of the time," whereas only 49 percent of the satellite students agreed with the same statement. Student differences in the same magnitude were seen for the following statements

"I like most of the food."
"The food is good for me."
"I enjoy getting the school lunch."
"The food usually looks good."

Attitude Differences of Teachers

In general, the attitudes of teachers in schools with on-site kitchens were more positive than teachers in schools with satellite kitchens. Exhibit 11.8 compares the percentage of teachers from each type of school that either "agreed very much" or "agreed" with each of the statements. Fifty percent of teachers in schools with on-site cafeterias said the food tastes good most of the time, whereas only 26 percent in schools with satellite kitchens agreed with the statement. Forty-nine percent of teachers in on-site schools felt the food is usally served at the right temperature, and 30 percent in satellite schools felt the food is usually served at the right temperature. In general, teachers at on-site schools felt somewhat more positive about the food served to students and the cafeteria environment, especially the people who work in the cafeteria. Teachers in satellite schools expressed less positive attitudes toward these aspects of the school lunches served at their schools.

Exhibit 11.6

POSITIVE STATEMENTS OF PARENTS AND STUDENTS
BY ON-SITE AND SATELLITE SCHOOLS*

Statement	Group	Percentage
		0 20 40 60 80
The food tastes good most of the time.	Student-on-site	60
	Student-satellite	40
	Parent-on-site	70
	Parent-satellite	50
I like most of the food served.	Student-on-site	61
	Student-satellite	36
	Parent-on-site	52
	Parent-satellite	48
The food is good for me.	Student-on-site	65
	Student-satellite	34
	Parent-on-site	80
	Parent-satellite	77
I enjoy getting the school lunch.	Student-on-site	55
	Student-satellite	35
	Parent-on-site	55
	Parent-satellite	51
The people who work in the cafeteria are nice.	Student-on-site	77
	Student-satellite	65
	Parent-on-site	85
	Parent-satellite	76
The lunch is a good buy.	Student-on-site	37
	Student-satellite	23
	Parent-on-site	72
	Parent-satellite	65
The lunchroom is a pleasant place to eat.	Student-on-site	46
	Student-satellite	29
	Parent-on-site	59
	Parent-satellite	44
The food usually looks good.	Student-on-site	55
	Student-satellite	31
	Parent-on-site	72
	Parent-satellite	49
The food is usually served at the right temperature.	Student-on-site	61
	Student-satellite	47
The food is usually cooked the right amount.	Student-on-site	62
	Student-satellite	45

*Percent of respondents who "agreed" or "agreed very much" with the statement.

Exhibit 11.7

NEGATIVE STATEMENTS OF PARENTS AND STUDENTS BY ON-SITE AND SATELLITE SCHOOLS*

*Percent of respondents who "agreed" or "agreed very much" with the statement.

Exhibit 11.8

COMPARISON OF PRINCIPAL AND TEACHER ATTITUDES:
ON-SITE VS. SATELLITE*

Statement	Principals		Teachers	
	On-Site	Satellite	On-Site	Satellite
POSTIVELY-WORDED STATEMENTS				
The food tastes good most of the time.	93	82	50	26
The food is usually cooked too much.	7	14	12	13
Students like most of the food served.	93	64	45	22
The meals are nutritious and well-balanced.	86	100	40	33
There is not enough food served.	11	29	14	19
Students enjoy getting the lunch.	89	61	49	29
The hot food is usually cold.	4	0	7	6
Lunch is served too early in the morning; some students are not hungry.	4	0	3	1
The people who work in the cafeteria are nice to the students.	89	96	48	42
NEGATIVELY-WORDED STATEMENTS				
The food is fixed too far ahead of when students eat it.	0	13	7	12
Students have to wait in line too long to get the lunch.	21	9	9	7
The portions are too large.	4	8	2	0
The cafeteria is a pleasant place to eat.	70	50	47	28
Students do not have enough time to eat lunch.	7	4	4	5
The food usually looks good.	89	77	48	27
They always serve the same things.	22	39	19	19
The students have trouble getting the school lunch to their tables.	7	9	3	14
The food is usually served at the right temperature.	96	95	49	30
The food is usually cooked the right amount.	100	86	44	29

*Exhibit entries are the percentage who either "agree very much" or "agree" with each statement.

Attitude Differences of Principals

Exhibit 11.8 also shows the percentage of principals from elementary schools with on-site kitchens and satellite kitchens who either "agreed very much" or "agreed" with the positive and negative statements. The data indicate that principals from schools with on-site kitchens have slightly more positive attitudes toward the school lunch program than do principals from schools with satellite kitchens. The difference is not as great as that shown for teachers. Ninety-three percent of the principals with on-site kitchens agreed

that the food tastes good most of the time as compared to 82 percent of the satellite principals. The statement with the largest percentage difference was "Students enjoy getting the lunch" with 89 percent of on-site principals agreeing, while only 61 percent of satellite principals agreed to the statement. More principals of schools with on-site kitchens thought students had to wait too long in line than did principals of satellite kitchen schools (21 percent vs. 9 percent).

Overall Attitudes of Parents, Students Principals, and Teachers

An overall attitude score was computed for each respondent by giving points for the degree of agreement/disagreement for each positive and negative statement. The following point system was used

Positive Statements		Negative Statements	
Agree very much	+2	Agree very much	-2
Agree	+1	Agree	-1
Disagree	-1	Disagree	+1
Disagree very much	-2	Disagree very much	+2

Thus, the range of individual attitude scores can be from -40 (very negative) to +40 (very positive). Exhibit 11.9 shows the average overall attitude scores for the different groups by type of school. Attitude score data generally confirms earlier findings that (1) parents have a more positive attitude toward the school lunch program than do students, (2) principals, likewise, have a more positive attitude than do teachers, and (3) all groups from on-site schools have a slightly more positive attitude than their counterparts from satellite schools.

Exhibit 11.9

COMPARISON OF AVERAGE OVERALL ATTITUDE SCORES BY RESPONDENT GROUP

Group	On-Site	Satellite
Students	6.1 (N=616)	- 0.1 (N=488)
Parents	11.8 (N=124)	8.6 (N=135)
Principals	23.1 (N=28)	15.3 (N=24)
Teachers	14.8 (N=122)	8.1 (N=102)

Plate Waste Differences

Consumption of Food Groups

Plate waste data depicted in Chapter 9 were analyzed by type of delivery system (on-site vs. satellite) and are shown in Exhibit 11.10. This exhibit shows the percentage of students (by delivery system) who consumed 50 percent

or more of each food category. Percent of students who consumed at least one-half a serving of protein (both with and without milk considered as a protein food) was very high in both on-site and satellite schools. However, in both cases the percentage was slightly higher in schools with on-site kitchens. In fact, the percentages were slightly higher for all major categories, except dessert, for on-site schools. Of particular significance are the two categories of "vegetables" and "fruit or vegetables." For on-site schools, 57 percent of the students ate at least one-half serving of a vegetable (not counting french fries or tater rounds) as compared to 36 percent for satellite schools. Likewise, the proportion of students who ate at least one-half of a fruit or vegetable food was 82 percent for on-site schools as compared to 67 percent in satellite schools. No differences were found in the beverage and milk consumption.

Exhibit 11.10

CONSUMPTION OF FOOD GROUPS IN SCHOOL LUNCH BY DELIVERY SYSTEM

Food Category	On-Site N = 1837	Satellite N = 1100
Protein (Milk excluded)	89	85
(Milk included)	100	97
Bread	86	81
Vegetable (Tater Rounds and French Fries excluded)	29	20
Fruit	55	49
Fruit or Vegetable (Tater Rounds and French Fries excluded)	69	60
Beverage	86	84
White or Chocolate Milk	83	83
Dessert	46	49
Salt Snack	3	5

Note: Exhibit entries are percentage of N who consumed .5 serving or more of a food category. For example, of the 1837 on-site school lunches observed, over .5 serving of protein was eaten for 90 percent of them.

Consumption of Individual Food Items

Exhibit 11.11 provides data showing the average proportion of servings consumed, by type kitchen, of specific food items. Statistically significant consumption differences between on-site and satellite kitchens were found in 17 of the 49 individual food items (34 percent). All differences showed greater consumption for the on-site schools. Conversely, there was no significant difference in plate waste between on-site and satellite schools for 32 of 49 items (64 percent).

Exhibit 11.11

CONSUMPTION OF ITEMS IN REGULAR AND ALTERNATE SCHOOL LUNCH:
ON-SITE VS. SATELLITE

Food	On Site Mean	Satellite Mean	Difference *	p
Fish	.81 (n= 174)	.90 (n= 47)	-.09	ns
Cheese	.76 (n= 307)	.59 (n=219)	+.18	.001
Chicken, Fried	.78 (n= 215)	.72 (n= 45)	+.06	ns
Chicken, Oven-baked	.79 (n= 51)	.69 (n= 76)	+.10	ns
Hamburger	.87 (n= 258)	.83 (n= 84)	+.04	ns
Peanut Butter without Jelly	.75 (n= 106)	.40 (n= 46)	+.35	.001
Pizza	.88 (n= 335)	.85 (n=320)	+.03	ns
Sloppy Joe	.86 (n= 27)	.76 (n= 74)	+.10	ns
Turkey Dog	.90 (n= 74)	.93 (n= 24)	-.03	ns
Burrito Filling	.68 (n= 35)	.80 (n= 33)	-.12	ns
Dinner Roll	.67 (n= 257)	.45 (n=110)	+.22	.001
Hamburger Roll	.80 (n= 511)	.84 (n=328)	-.04	ns
Hot Dog Roll	.91 (n= 108)	.83 (n= 24)	+.08	ns
Macaroni Salad	.55 (n= 99)	.25 (n= 42)	+.30	.001
Pita Bread	.77 (n= 24)	.83 (n= 88)	-.06	ns
Pizza Dough	.87 (n= 332)	.83 (n=326)	+.04	ns
Rice	.81 (n= 71)	.46 (n= 76)	+.35	.001
Wheat Roll	.76 (n= 72)	.27 (n= 25)	+.49	.001
White Bread	.77 (n= 304)	.69 (n=129)	+.08	.01
Applesauce	.77 (n= 71)	.66 (n=223)	+.11	ns
Canned Mixed Fruit Cup	.72 (n= 212)	.59 (n=113)	+.13	.01
Canned Peaches	.64 (n= 110)	.65 (n= 43)	-.01	ns
Canned Pears	.76 (n= 111)	.60 (n= 50)	+.16	ns
Canned Pineapple Sections	.86 (n= 134)	.54 (n= 78)	+.31	.001
Fresh Apple	.47 (n= 293)	.45 (n=151)	+.02	ns
Fresh Orange or Tangerine	.65 (n= 364)	.54 (n=120)	+.11	.03
Baked Beans	.37 (n= 79)	.40 (n= 24)	-.03	ns
Bean Salad	.55 (n= 49)	.14 (n= 93)	+.41	.001
Broccoli	.46 (n= 88)	.19 (n= 42)	+.27	.001
Corn	.59 (n= 213)	.44 (n= 34)	+.14	ns
French Fries	.85 (n= 438)	.79 (n= 71)	+.06	ns
Green Beans	.21 (n= 35)	.18 (n= 49)	+.03	ns
Lettuce (on sandwich)	.41 (n= 41)	.33 (n=103)	+.08	ns
Lettuce-Green Salad	.46 (n= 183)	.57 (n= 74)	-.11	ns
Mashed Potatoes	.62 (n= 50)	.60 (n= 17)	+.02	ns
Mixed Vegetables	.37 (n= 95)	.11 (n= 23)	+.26	.001
Peas	.26 (n= 166)	.13 (n= 75)	+.13	.01
Tater Rounds	.92 (n= 212)	.89 (n=118)	+.03	ns
Chocolate Milk	.83 (n=1427)	.83 (n=890)	0	ns
Lowfat Milk	.78 (n= 327)	.80 (n=146)	-.02	ns
Candy Bar	.73 (n= 13)	.82 (n= 16)	-.09	ns
Cookies (oatmeal, peanut butter)	.95 (n= 145)	.68 (n= 26)	+.27	.01
Cookies (other)	.88 (n= 222)	.87 (n=320)	+.01	ns
Fruit Crisp	.54 (n= 94)	.30 (n=141)	+.24	.001
Fruit Juice Bar	.82 (n= 50)	.88 (n= 49)	-.06	ns
Ice Cream	1.01 (n= 368)	1.03 (n=160)	-.02	ns
Pudding	.94 (n= 51)	.78 (n= 18)	+.16	ns
Potato Chips	.85 (n= 12)	.77 (n= 14)	+.08	ns
Soup	.69 (n= 101)	.33 (n= 13)	+.36	.02

Note: Exhibit entries are average proportion of serving consumed.
*Difference-On-Site-Satellite. Positive numbers indicate greater consumption in the on-site schools.

Differences in the Balance Index

Exhibit 11.12 utilizes the "balance index" data calculated in Chapter 10 to compare the meals consumed by students in Grades 1, 3, and 5 in both on-site and satellite schools. The index is a measure of whether students ate meat, bread, fruit and/or vegetable and milk. The closer the index is to one, the closer the meal eaten was to one serving of each of the food components. The results show that the index for all three grades was slightly higher in on-site schools than in satellite schools indicating the students in the on-site schools eat more of the food components in their lunches. There was an increase in the index with increasing grade in both satellite and on-site schools.

Exhibit 11.12

BALANCE INDEX FOR SCHOOL LUNCHES
BY GRADE AND DELIVERY SYSTEM

	On-Site	Satellite
Grade 1	.65 (N=358)	.56 (N=149)
Grade 3	.71 (N=734)	.61 (N=462)
Grade 5	.73 (N=744)	.65 (N=48)
Total	.71 (N=1828)	.62 (N=1101)

Reasons Students Do Not Eat School Lunch Everyday

The primary reasons reported in Chapter 8 for students not eating the school lunch everyday were "I don't like the food," "I'd rather bring lunch from home," and "The lunch costs too much." When these data were examined by students and parents from on-site vs. satellite kitchen schools, the top three reasons for not eating the school lunch did not change. Exhibit 11.13 shows the percentage of each group which checked the given reason. Even the rank ordering of the top three reasons was the same for on-site and satellite schools. Clearly, however, students from satellite schools felt more strongly about these three reasons. For example, 38 percent of satellite students checked "I don't like the food," whereas 28 percent of students from on-site schools checked that reason. Likewise, parents from satellite schools were slightly more emphatic about the primary reasons their children do not eat the school lunch. For example, 48 percent of parents with children in satellite schools checked the reason "My child doesn't like the food" as compared to 41 percent of the parents from on-site schools.

Portion and Quality Control

Basically the same procedures and equipment are used to control the serving portions for meals served at on-site and satellite schools. The difference is the location at which portion control is exercised. Whereas portion control is observed at each individual on-site kitchen, for satellite schools this is accomplished at the point of production, preparation, and packaging, i.e., the central kitchen. Consequently, satellite workers do not have to measure portions because food items arrive at the kitchen preportioned. Food Services management defines portion sizes for food items for regular, alternate lunches

Exhibit 11.13

REASONS STUDENTS DO NOT EAT LUNCH EVERYDAY

Reason	Student		Parent	
	On Site	Satellite	On Site	Satellite
I don't like the food.	28	38	41	48
I'd rather bring a lunch	27	37	32	34
The lunch costs too much.	12	18	14	11
I'd rather buy just a few things (like soup or sandwich).	7	10	9	8
I have to wait in line too long.	8	6	6	4
I'd rather go home for lunch.	3	5	-	-
I'm on a special diet.	2	1	3	1
My parents won't let me.	3	3	6	7
Because of my religion.	2	1	2	0
My child would rather go out for lunch.	-	-	1	1
Other	8	10	6	11

NOTE: Exhibit entries are percentage of respondents who checked the reason. Responses do not total 100 percent because respondents could check more than one answer. Wording is from student surveys. Parent survey had parallel wording, for example, "My child is on a special diet."

and a la carte items and distribute these to cafeteria managers in the document "Standard Portion and Price Control." Cafeteria workers utilize standard equipment such as scoops, ladles, scales, and measuring cups to control portion sizes to the established guidelines.

Various specific activities are carried out to check the quality of food served in on-site and satellite cafeterias. Food quality may be checked at two points: when it is received from vendors and when it is prepared. Field supervisors work with cafeteria managers and satellite workers to ensure and enhance food quality. In central kitchens and schools with on-site kitchens the supervisor may observe cooking procedures; taste food; check the dining room to see what children are eating; check to see whether food preparation is starting too early; check texture, fragrance, and method of preparation; and determine if "cooks" are following recipes. Routine visits by field supervisors may be conducted to monitor individual preparation. If they notice food is not being handled according to guidelines, the field supervisor may work with staff individually, schedule in-service or other courses, or review quality guidelines. Comments from teachers and principals may prompt quality checks by the field supervisor. Bid specifications are also designed to assure food quality.

Generally, the same quality control measures are taken for satellite schools as in on-site schools except that food quality is primarily monitored at point of service rather than point of preparation. In addition, there is a quality control person who has a weekly schedule to visit schools. She will taste food if she has received complaints, observe and check the food temperature, and check kitchen sanitation. Also, the satellite worker checks the temperature before taking the food out of the oven. If there is a specific problem, the quality control person will spend more time in a particular school. Preparing and receiving of food are monitored at the central kitchen. Serving of food is monitored at the satellite.

Implications of the Findings

The overall finding of this chapter is that the MCPS prepackaged satellite delivery system is the most cost effective method currently available for serving lunch in elementary schools. Although both students and parents from on-site schools showed slightly more positive attitudes toward the school lunch program and although there was slightly less plate waste in on-site schools, these differences were not overwhelming and need to be weighed against the costs of the on-site programs. It has been projected that the conversion of all elementary schools to satellite operation in FY 1981 would have saved approximately $822,000. The question to be addressed is whether the cost savings to be obtained from satellite operation is worth some loss in positive attitude toward the school lunch program. With the opening of the central kitchen at Martin Luther King Junior High School in September, 1981, MCPS now has sufficient central kitchen capacity to serve all elementary schools without major expenditures of capital funds. In fact, the production capacity of the existing central kitchens, on a one-shift operation, exceeds the current demand for satellite meals. Although a second shift might be necessary in one or more central kitchens, physical space and equipment are available to expand satellite operation to all elementary schools. Conversion of on-site kitchens to satellite operation can be accomplished, in most cases,

with little physical modification. The only possible piece of new equipment required in each new satellite school is a convection oven; and as a result of an energy saving program, many on-site kitchens already have this type of oven or might obtain one from schools that will be closed this year.

On November 18, 1981, the Board of Education took an action which will close Pleasant View Elementary School in June, 1982, and thus created a question as to the status of the central kitchen in Pleasant View in FY 1983. The central kitchen in Pleasant View is mainly an assembly operation and actually does little cooking. Additional analysis will need to be conducted to determine if the remaining four central kitchens can pick up this capacity or if these operations will need to be relocated to another school. As the equipment at Pleasant View is easily transportable, only minor expense is associated with a relocation.

The conversion of the remaining on-site elementary schools to satellite operation will require significant planning and cooperation between Food Services staff, principals, and area administrative staff. In the current climate of school closings, it is important to recognize and consider the impact that conversion to satellite operation has on students, parents, and school staff. It is suggested that conversions be phased-in with clusters of elementary schools being converted over the next few years. A phased conversion plan would also allow adequate time for placement of Food Services employees who would be affected by the conversion to satellite operation.

A detailed technical study of the central kitchens should be conducted to determine the most cost effective staffing patterns and the best arrangement of central kitchens to satellite kitchens. The study should use linear programming techniques to optimize the assignment of satellite schools to central kitchens. Such techniques optimize production capabilities, location, and distribution expenses. Methods should also be explored to maximize the use of federal commodities under this arrangement. Although it is not anticipated that any commodities could be returned, additional use of processors could be initiated, and greater quantities of commodities could be used in the secondary school on-site kitchens. In anticipation of the possible switch to all satellite elementary school kitchens, steps should be taken now to address the problem of surplus on-site cafeteria managers which will develop from both the closure of on-site schools and the conversion to satellite. The Fifteen Year Comprehensive Master Plan for Educational Facilities has identified 20 elementary schools (11 existing satellite schools) for closing in June, 1982. As the five central kitchens are currently underutilized, additional excess capacity will be generated by these closings.

If all elementary schools are converted to satellite operation consideration should be given to modifying the current field supervisor structure. A functional division of supervisory responsibilities rather than an administrative area division would allow supervisors to specialize in a specific type of kitchen operation, i.e., on-site, satellite, or central.

Recommendations

- o MCPS should convert all existing elementary school on-site kitchens to satellite operation over the next few years.

- o A detailed study should be conducted of the capabilities, costs, and alternative central kitchen configurations to serve the expanded number of satellite kitchens.

- o If all elementary schools are converted to satellite operation, then the three field supervisor positions and the product and systems supervisor position should be converted to

  - A supervisor of central kitchens who would have direct responsibility for supervision of all central kitchens and 30 elementary satellite schools

  - A supervisor of elementary satellite schools who would have responsbility for supervision of the remaining 72 elementary satellite schools

  - A supervisor of middle and junior high schools who would have responsibility for the 24 middle, junior high schools

  - A supervisor of senior high schools who would have responsibility for the 22 senior high schools

- o One of the three satellite quality control assistants should be assigned to the central kitchens supervisor and the other two to the elementary school satellite supervisor.

- o If the number of satellite schools in operation in FY 1983 is reduced from present numbers by school closings, then central kitchens operations should be consolidated. In such a situation, the two central kitchens without cooking facilities should be closed.

- o Cost accounting data should be collected, and the cost to prepare frozen hot packs should be accurately calculated and compared to the cost of purchasing hot packs from commercial vendors.

- o The school system should give consideration to the conversion of at least some middle and junior high school on-site kitchens to satellite operation once all elementary schools are operating efficiently under satellite.

- o Ways should be explored to improve the quality and acceptance of satellite meals to increase satisfaction levels. This may require an education outreach program to alter perceptions of the satellite operation, rather than solely changes in food preparation and delivery.

PART IV

SUMMARY

CHAPTER 12 SUMMARY

SUMMARY OF MANAGEMENT ALTERNATIVES

The management alternatives presented here focus on the results and implications of the various combinations of the three major cost reduction recommendations: (1) conversion of all on-site elementary school kitchens to satellite operation, (2) elimination of local tax-supported funding, and (3) MCPS investment of surplus Food Services Funds.

Of the three major cost reduction recommendations, the elimination of local tax-supported funding has the greatest impact on the Food Services Program and on the MCPS Operating Budget. If considered separately, the elimination of the full $593,000 in FY 82 support in the operating budget would require a $.07 increase in the price of a regular lunch. Charging the Food Services Program for all MCPS-provided services (estimated at $379,000) would require an addition $.04 price increase per lunch. The other two cost reduction recommendations, however, (conversion to satellite operation and investment of Food Service Funds) can be implemented without affecting the Food Services revenues and thus do not have a negative impact on the price charged for meals. In fact, the savings generated from these recommendations could be used to (1) eliminate the price increases discussed above, (2) reduce the current price of lunches or (3) offset potential future increases that might be proposed because of inflation or further reduction in the level of federal cash reimbursements.

The amount of savings or revenue generated by each recommendation is based on FY 1981 data and assumes a full year's operation under the recommendation. As Food Service staff will need time to study and plan for the phased implementation of these recommendations, some, but certainly not all, of the projected cost reductions should be available in FY 1983. The meal price increase projections generated in some alternatives are also based on FY 1981 data and will have to be adjusted forward for inflation to the planned implementation year.

The net cost savings and the impact on meal prices of these three recommendations can vary widely depending on the combination of the three recommendations implemented and decisions as to where to apply the generated savings. To illustrate this point several of the numerous possible alternatives are presented:

- If management's objective is to maximize cost reductions and to accept the resulting impact on the price of meals, $1,944,000 could be saved with a resultant $0.11 increase in the price per meal. This would make the Food Services Program entirely self-supporting, as most others in Maryland.

- If the objective was to use all cost savings to off-set potential future meal price increases, the $972,000 savings could offset a future price increase of $0.12 per meal.

- Another possible alternative would generate $1,565,000 in savings, while causing an approximate $0.07 increase in the price of meals. This alternative recommends (1) the conversion of all elementary schools to satellite operation, (2) the investment of Food Services Funds, and (3) the elimination of the direct operating budget support (but not charging Food Services for MCPS services).

- An additional alternative could result in approximately $1 million ($972,000) of tax-supported funds being reduced from the operation budget without a negative impact on the price charged for lunch. In this case, all three major cost reduction recommendations are implemented, and the cost savings generated by conversion of all elementary schools on-site kitchens to satellite operation and investment of Food Services Funds are used to offset the loss of revenue ($593,000) and additional expenses ($379,000) caused by elimination of all MCPS support to the Food Services Program.

This last alternative is recommended.

CHAPTER 12

SUMMARY OF MANAGEMENT AND POLICY ALTERNATIVES

Introduction

The objective of this chapter is to interrelate those study findings and recommendations which have a significant impact on cost of the Food Services Program. Whereas most of the detailed recommendations made in individual chapters are administrative in nature and, if implemented, would result in increased program efficiencies or improved service, the management alternatives presented in this chapter hold potential for significantly greater financial payback. The chapter focuses on the results and implications of various combinations of three major recommendations (1) conversion of all on-site elementary school kitchens to satellite operations, (2) elimination of local tax-supported funding, and (3) MCPS investment of surplus Food Services Funds.

Summary of Major Cost Reduction Recommendations

Conversion to Satellite Operation

The previous chapter provided data to support the recommendation of converting all elementary schools to satellite operation. Had such action been taken under the conditions prevailing in FY 1981, a total savings of $822,000 would have resulted. These cost savings are attributed to significantly less labor expenses associated with the satellite delivery system. To achieve these savings, however, MCPS must be prepared to accept and/or address the slightly less positive student and parent attitudes toward satellite meals and the slightly greater plate waste associated with satellite operation.

Elimination of Local Tax-Supported Funding

A survey of other large Maryland school districts indicated that MCPS supports the Food Services Program from local tax-supported funds to a far greater extent than other districts. Chapter 5 recommended that the Superintendent and Board of Education review this policy and give serious consideration to eliminating or significantly reducing this support. In FY 1982 MCPS is supporting the Food Services Program with $593,034 in Categories 9 and 10 of the Operating Budget and another $379,000 in potentially reimbursable expenses for services provided by MCPS to the Food Services Program.

Investment of Food Services Funds

Analysis of MCPS accounting procedures found that Food Services Funds are not currently maintained in a separate fund and that the sizable surplus in the general fund and funds in the numerous school checking accounts are not invested. The investment of these funds could generate an estimated $150,000 of annual interest income for the Food Services Program.

Summary of Implementation Considerations

As discussed in Chapters 3 and 11, Food Services' ability to obtain the cost savings projected from these recommendations are highly dependent upon a number of factors. Food Services staff will need time to plan the best strategies for the phased implementation of the conversion of all elementary school cafeterias to satellite operation. Consequently, only part of the projected cost reductions can be expected in FY 1983. It will be important to monitor any savings accrued from conversions in FY 1983 and appropriately adjust future projected savings accordingly. The potential withdrawal of local support (Category 10) and the assessment of Food Services for current MCPS in-kind services, will make it more difficult for Food Services to continue to maintain the profitability shown in the past ten years. Thus, it becomes increasingly important that Food Services increase its influence and control over the in-school factors discussed in Chapter 3 which may significantly impact its profitability.

Implementation Alternatives for Cost Reduction Recommendations

Of the three major cost reduction recommendations, the elimination of local tax-supported funding has the greatest impact on the Food Services Program and on the MCPS Operating Budget. If this recommendation is considered separately from the other two, the loss of program revenue from the withdrawal of local support would most likely have to be recovered by meal price increases. Chapter 5 projected, based on FY 1981 participation rates and revenue, that a $.03 increase in the price of lunches would be required for each $250,000 of additional expenses (or loss of revenue). The elimination of the full $593,000 in FY 1982 support in the Operating Budget would require a $.07 increase in the price of a regular lunch. Charging the Food Services Program for all MCPS provided services (estimated at $379,000) would require an additional $.04 price increase per lunch. Thus, when considered singularly, the elimination of the total MCPS support/subsidy to the Food Services Program would result in an estimated $.11 increase in the price of a regular school lunch.

The other two cost reduction recommendations, however, (conversion to satellite operation and investment of Food Services Funds) can be implemented without directly affecting the Food Services revenues and thus do not have a negative impact on the price charged for meals. In fact, the savings generated from these recommendations could be used to (1) eliminate the price increases discussed above, (2) reduce the current price of lunches, or (3) offset potential future increases that might otherwise be necessary because of inflation or the reduction in the level of federal cash reimbursements.

Consequently, the net cost savings and the impact on meal prices of these three recommendations can vary widely depending on the combination of the three recommendations implemented. Exhibit 12.1 illustrates the wide variance in results that can be obtained from the various combinations of these recommendations. If, for example, management's objective were to maximize cost reductions and to accept the resulting impact on the price of meals (Alternative I.), $1,944,000 could be saved with a resultant $.11 increase in

Exhibit 12.1

IMPLEMENTATION ALTERNATIVES OF MAJOR
COST REDUCTION RECOMMENDATIONS

Alternative	Estimated Savings	Category of Savings	Impact on Meal Prices
(I.) . Conversion to satellite	$ 822,000	61	-0-
. Investment of funds	150,000	61	-0-
. Elimination of direct support	593,000	9 & 10	7¢ increase
. Charge for service provided	379,000	*	4¢ increase
Total	$1,944,000		11¢ increase
(II.) . Conversion to satellite	$ 822,000	61	-0-
. Investment of funds	150,000	61	-0-
. Elimination of direct support	593,000	9 & 10	7¢ increase
Total	$1,565,000		7¢ increase
	Revenue/ Savings to Category 61	Revenue/ Savings to Category 10	
(III.) . Conversion to satellite	$ 822,000		-0-
. Investment of funds	150,000		-0-
. Elimination of direct support		$593,000	-0-
. Charge for service provided		379,000	-0-
Total	$ 972,000	$972,000	no increase
(IV.) . Conversion to satellite	$ 822,000	61	9.8¢ decrease
. Investment of funds	150,000	61	1.8¢ decrease
Total	$ 972,000		11.6¢ decrease

*Revenue generated would go to General Fund

the price per meal. At the opposite extreme, if the objective were to use all cost savings to offset potential future meal price increases (Alternative IV.), the $972,000 savings could offset a future price increase of $.116 per meal. It is obvious that a number of additional alternatives exist between these two extreme positions. Alternative II. generates $1,565,000 in savings, while causing an approximate $.07 increase in the price of meals. This alternative recommends (1) the conversion of all elementary schools to satellite operations, (2) the investment of Food Services Funds, and (3) the elimination of the direct Operating Budget support (but not charging Food Services for MCPS services). Alternative III. illustrates a method where approximately $1 million ($972,000) of tax-supported funds can be reduced from the Operating Budget without a negative impact on the price charged for lunch. In this alternative, all three major cost reduction recommendations are implemented, and the cost savings generated by conversion of all elementary schools kitchens to satellite operation and the investment of Food Services Funds are used to offset the loss of revenue ($593,000) and additional expenses ($379,000) caused by elimination of all MCPS support to the Food Services Program.

Conclusions

The primary considerations in the analysis of the implementation alternatives presented in Exhibit 12.1 were that (1) MCPS should eliminate or significantly reduce the local support to the Food Services Program, (2) cost savings should accrue to taxpayers through Category 10 of the Operating Budget, and (3) cost reductions should not necessitate lunch price increases. Consequently, Alternatives I. and II. were eliminated because they would necessitate a $0.11 and $0.07 increase in the price of a meal at a time when inflation and the reduction/elimination of federal cash reimbursements might themselves necessitate increased meals prices. Although Alternative IV. generates revenue ($0.116 per meal) which is applied to offset future price increases, it does not reduce local taxpayer support to the Food Services Program and was thus eliminated from consideration.

Recommendation

Alternative III should be implemented by the school system.

APPENDICES

APPENDIX A

Data Collection Procedures

Sample Selection

A total of 34 schools were selected for participation in the study. Included in the sample were 12 elementary schools with on-site cafeterias, 12 elementary schools with satellite cafeterias, 4 junior high schools, 2 middle schools, and 4 high schools.

The 34 schools represented a stratified random sample. Schools were stratified by grade level and within grade level by participation rates (high, low) and the difference between income and expenditures (high, low). Schools scheduled to be closed at the end of the school year were excluded from the pool before selection. Any selected schools that had recently participated in several other major studies were replaced.

A supplemental sample of 47 schools was selected to increase the sample size for some of the questionnaires (principal, teacher, and cafeteria personnel). All schools not scheduled to close or selected as part of the 34 study schools were stratified by grade level and type of delivery system. Schools were randomly selected from within the groups.

Data Collection Activities

Several kinds of data collection activities were carried out in the 34 study schools. These activities included the following

- Distribution of student surveys
- Distribution of parent surveys
- Distribution of teacher surveys
- Distribution of a principal survey
- Distribution of surveys for cafeteria personnel
- Observation of plate waste in the lunch room
- Interview with the principal
- Interview with the cafeteria manager or satellite worker

A one-week training session was held prior to data collection to explain the study and activities to the field staff.

Student surveys were distributed to students in Grades 4, 6, 8, and 11. Data collectors were instructed to randomly select classes within a school so that 25 surveys could be distributed to fourth graders, 25 to sixth graders in elementary schools, 75 to sixth graders in middle schools, 100 to eighth graders and 150 to tenth graders.

Similar goals were set for the parent surveys which were distributed to students in Grades 3, 5, 7, and 10. Students were instructed to take the questionnaire home to their parents and bring them back to the school office after completion. Two forms of the parent survey were distributed. Assembling all the questions designed for parents in one questionnaire would have resulted in an unreasonably lengthy survey.

The amount of plate waste in school and bag lunches was observed for two consecutive days in the school lunch room. Data collectors met with selected classes of students from Grades 3, 5, 7, and 10 in the morning. The study was explained and the students were asked to bring their trays with all their trash after they had finished eating to the data collectors who would be stationed in the lunch room. Students in the three older grades were given cards on which they were asked to write down the foods and the amounts (1, 1/2, etc.) they had to start with for lunch that day. The third graders were questioned about their foods when they brought their trash to the data collectors.

After students deposited their trays, the data collectors coded each tray as to the types of food, i.e., pizza, lettuce salad, chocolate milk, etc., the initial quantity and the percentage remaining, i.e., 0, 25, 50, 75, or 100 percent, of each type of food. The type of lunch (regular school lunch, alternate school lunch, bag lunch, or a la carte only), the student's sex, and the grade level were also recorded.

Part way through the study, first graders were added to the plate waste sample. It was felt that the younger children were throwing away more food than the third graders and that a substantial amount of information would be lost if data were not collected for the younger students. Plate waste was observed only for the first graders' school lunches. The bag lunches required more questioning of students, and additional trained personnel were not available.

Data collectors spent a third day in each school lunchroom observing the operation of the cafeteria. They also taste tested the foods over the three days.

All data collection was carried out between January and March, 1981. Surveys were sent to the schools in the supplemental sample during February and March.

The resulting number of respondents in each groups are shown in Exhibits AA.1, AA.2, AA.3, and AA.4.

Exhibit AA.1

SAMPLE SIZE FOR STUDENT SURVEYS BY GRADE AND SEX

	Grade 4	Grade 6	Grade 8	Grade 11	Total
Male	340	286	314	247	1,187
Female	323	289	292	206	1,110
Total	663	575	606	453	2,297

NOTE: Total sample for student surveys was 2,311. Fourteen students were missing grade and/or sex data.

Exhibit AA.2

SAMPLE SIZE FOR PARENT SURVEYS BY GRADE AND FORM

	Grade 3	Grade 5	Grade 7	Grade 10	Total
Form 1	214	230	76	22	542
Form 2	200	170	103	45	518
Total	414	400	179	67	1,060

NOTE: Total sample for parent surveys was 1,077. Seventeen surveys were missing grade data.

Exhibit AA.3

SAMPLE SIZE FOR TEACHER SURVEYS

	Elementary	Junior/Middle	High	Special	Total
Male	58	51	45	24	178
Female	296	110	60	40	506
Total	354	161	105	64	684

NOTE: Total sample size for the teacher surveys was 690. Six teachers were missing sex or school level data.

Exhibit AA.4

SAMPLE SIZE FOR PRINCIPAL SURVEY

	Elementary	Junior/Middle	High	Special	Total
Principals	50	12	6	6	74

Note: Total sample size for principal surveys was 76. Two principals were missing school level data.

APPENDIX B

SATELLITE SCHOOL ASSIGNMENTS
FY 1982

CENTRAL KITCHEN
Fallsmead Elementary

SATELLITES
Bannockburn
Beverly Farms
Burning Tree
Carderock Springs
Connecticut Park
Darnestown
Dufief
Hungerford Park
Lake Normandy
Potomac
Rock Creek Valley
Rosemont
Carl Sandburg
Seven Locks
Travilah

CENTRAL KITCHEN
Sherwood Elementary

SATELLITES
Belmont
Burtonsville
Candlewood
Cloverly
Galway
Georgian Forest
Jackson Road
Olney
Page
Stonegate
Westover

CENTRAL KITCHEN
King Junior High

SATELLITES
Cedar Grove
Clarksburg
Fox Chapel
Taylor

CENTRAL KITCHEN
Takoma Park Elementary

SATELLITES
Arcola
Brookview
Cresthaven
East Silver Spring
Forest Grove
Forest Knolls
Four Corners
Kemp Mill
McKenney Hills
Montgomery Knolls
New Hampshire Estates
Pine Crest
Woodlin

CENTRAL KITCHEN
Pleasant View

SATELLITES
Ashburton
Aytlawn
Bethesda
Bradley
Brookmont
Garrett Park
Kensington
Lynnbrook
Montrose
North Chevy Chase
Parkwood
Radnor
Rollingwood
Somerset

APPENDIX C

Description of Food Service Data Collection Forms

The daily input sheet, "bubble sheet," or daily tally is a form for recording quantity of all categories of meals or items sold on a daily basis. The sheets are processed by the Division of Accounting in the Department of Financial Services. Information provided on the report includes the record of participation, number of meals served in each category, a la carte sales, etc. Information from the bubble sheet is fed into the computer to produce the Participation and Receipts Listing (or Profit/Loss Statements). These are reviewed by the area supervisors for management purposes.

Verified deposit statements are used to assure area supervisors that all daily deposits from the daily sales of meals have been made to banks on a timely basis. They are based on the records of deposits made by the cafeteria managers and are provided to area supervisors on a weekly basis. Cafeteria managers are responsible for deposited cash received at their school.

Backup sheets for Senior Citizen and Day Care programs are forms completed by managers for recording the numbers of meals provided to all senior citizens and day care groups. These sheets are maintained only in schools that serve these special programs.

Physical Inventory is a monthly record maintained by cafeteria managers. The inventory is a comprehensive list of type and quantity of food and supply items that a manager has on hand (in storage). The area supervisors can review these inventories to determine, for example, whether a manager is retaining excessive inventories.

Inventory Summary Sheet is a form completed by managers that is a summary of categories of food such as meat/dairy products and supply items that the cafeteria managers have on hand (in storage).

Commodity Perpetual Inventory is maintained by cafeteria managers. It is a daily record of commodities utilized daily by a particular kitchen. It provides current information for area supervisors to review to facilitate allocation of commodities among schools.

Information Regarding Surplus Commodities is sent to area supervisors so they can identify schools with an extra supply of commodities on hand. This information makes it possible to redistribute commodity items from schools holding a surplus to schools with diminished supplies of specific items.

Food Orders are forms used by cafeteria managers to request all types and quantities of items from all vendors for their cafeteria. The orders are reviewed by the Food Services Central Office. A commodity order form is provided so that commodity orders are placed on an order form that can be sent to the assistant director of the Division of Food Services.

Secondary Schools' a la carte production sheet (completed by secondary school cafeteria managers only) is a record maintained by cafeteria managers of all a la carte items that are prepared and sold in a cafeteria.

I. TYPE OF SUPPORT REQUESTED — Inventory Control System (SLICS)

II. DIVISION — Division of Food Services

III. OVERVIEW OF SERVICES BEING REQUESTED

An automated system to provide the following modules; Basic inventory accounting, on line receiving, reorder-entry, stock status inquiry, provide stock management reports, provide online data entry of school requisitions and warehouse transactions, convert calendar weeks of menu planning to delivery-schedule, produce reorder lists and maintain reorder points, manage items on-hand but allocated for delivery, support warehouse locator function, extend inventories in school on monthly basis, support accounting by food cost, provide accounting data in MCPS format, develop menu planning, recipe maintenance, ingredient calcutations, production worksheets, handle unit-of-issue to unit-of-order conversion, support optional truck loading and scheduling.

IV. CURRENT METHOD OF PROVIDING SERVICE

N/A

V. BRIEF DESCRIPTION OF WHAT IS NEEDED AT THE EARLIEST POSSIBLE DATE:

See III.

VI. DRIVING FORCES BEHIND FORECASTED CHANGES

New Food Service Warehouse to be completed in February, 1982.

VII. OTHER POTENTIAL USERS

Accounting, Procurement, Supply and other county agencies

VIII. COST/BENEFIT CONSIDERATIONS

Bulk buying is expected to trim 20% off food and supply costs. To translate the cost savings into hard savings MCPS must efficiently manage the storage and distribution that passes through the warehouse. This system will dramatically reduce cafeteria accounting workload, could be used to modify the supply division's warehouse operation.

Secondary Account Manager

Primary Account Manager

SUMMARY OF NEED FOR NEW/ADDITIONAL DATA PROCESSING SUPPORT

I. TYPE OF SUPPORT REQUESTED — Cafeteria Accounting Improvements

II. DIVISION — Division of Food Services

III. OVERVIEW OF SERVICES BEING REQUESTED

Provide support to allow accounting to enter payment transactions for products delivered to schools by vendors and allow data to pass into the warehouse system to update warehouse detail transaction history file and a summary payment transaction passed to accounting for payment.

IV. CURRENT METHOD OF PROVIDING SERVICE

Makes payment to vendor when an invoice is received from supplies and a signed delivery ticket from schools. A payment transaction is prepared by accounting for each school reflecting each schools portions of the total invoice amount. This is necessary to prepare income and expense statements by individual school. Accounting summarizes by vendor and prepares one check for the total invoiced amount.

V. DRIVING FORCES BEHIND FORCASTED CHANGES

To support the food service warehouse inventory control system.

VI. OTHER POTENTIAL USERS

Procurement

VII. COST/BENEFIT CONSIDERATIONS

Facilitate preparation of the profit and loss statements for each school and a consolidation county wide report.

SUMMARY OF NEED FOR NEW/ADDITIONAL DATA PROCESSING SUPPORT

I. TYPE OF SUPPORT REQUESTED — Identification of Hidden Costs

II. DIVISION — Division of Food Services

III. OVERVIEW OF SERVICES BEING REQUESTED

Detail of workman compensation, unemployment, leave usage changes to schools which add to Labor cost; also outside use of facilities.

IV. CURRENT METHOD OF PROVIDING SERVICE

None

V. BRIEF DESCRIPTION OF WHAT IS NEEDED AT THE EARLIEST POSSIBLE DATE:

Track reimbursable costs to ensure repayment.

VI. DRIVING FORCES BEHIND FORECASTED CHANGES

Greater use of benefits; need information for better control and recognition of costs.

VII. MINIMAL NEEDS

Track reimbursable items; federal and state audit requirements.

VIII. OTHER POTENTIAL USERS

Accounting, Budget

IX. COST/BENEFIT CONSIDERATIONS

Assurance of reimbursement.

X. SOURCES OF ADDITIONAL INFORMATION

Maryland State Department of Education

SUMMARY OF NEED FOR NEW/ADDITIONAL DATA PROCESSING SUPPORT

I. TYPE OF SUPPORT REQUESTED — Student Preferance Surveys

II. DIVISION — Division of Food Services

III. OVERVIEW OF SERVICES BEING REQUESTED

To develop a tool for determining students' preferences and desired frequency of service while maintaining budgetary control, and menu planning requirements.

IV. CURRENT METHOD OF PROVIDING SERVICE

Student surveys, review of participation reports, manager surveys and observations. No automated support.

V. DRIVING FORCES BEHIND FORECASTED CHANGES

Need to maintain high volume participation with diminishing federal funding with higher charges to students.

VI. OTHER POTENTIAL USERS

Health education programs

VII. COST/BENEFIT CONSIDERATIONS

Increase student participation, increased food consumption, decrease plate waste and food cost.

VIII. SOURCES OF ADDITIONAL INFORMATION

Research Report - Joseph Balintfy, University of Massachusetts

SUMMARY OF NEED FOR NEW/ADDITIONAL DATA PROCESSING SUPPORT

I. TYPE OF SUPPORT REQUESTED — Free and Reduced Price Meals Applications

II. DIVISION — Division of Food Services

III. OVERVIEW OF SERVICES BEING REQUESTED

Develop method of inputing via CRT listing of students eligible for free and reduced price meals by category, by school, by grade; numbers per school by category; by grade; by county; allow transfer and withdrawal of students to pass into the system; identify temporary approval students by school and termination date monthly; identify eligible members of households by schools; identify students disallowed and terminated by school, by county wide, identify students by school I.D. number, schedule ticket issue.

IV. CURRENT METHOD OF PROVIDING SERVICE

Manual search requiring extensive man hours to compile federally mandated semi-annual report. Requests for percentage of eligible students for other federal programs and other agencies require manual search; validating school lists with master file requires extensive school based time and food service staff time.

V. DRIVING FORCES BEHIND FORECASTED CHANGES

Newly enacted federal Assessment, Improvements Monitering System (AIMS) which imposes sanctions for errors. Loss of staff and new warehouse ordering requirements will impact available man hours to perform these functions adequately.

VI. OTHER POTENTIAL USERS

Headstart, DEA, Title I, Montgomery County Government Agencies, Schools

VII. COST/BENEFIT CONSIDERATIONS

Save manpower and reduce errors eliminating costly sanctions.

SUMMARY OF NEED FOR NEW/ADDITIONAL DATA PROCESSING SUPPORT

I. TYPE OF SUPPORT REQUESTED — Equipment Schedule

II. DIVISION — Division of Food Services

III. OVERVIEW OF SERVICES BEING REQUESTED

Listing of equipment for repair cost, maintenance scheduling, replacement schedule, depreciation schedule - by school, by item.

IV. CURRENT METHOD OF PROVIDING SERVICE

By school equipment inventory thru Property Management.

V. DRIVING FORCES BEHIND FORECASTED CHANGES

Reduces operating/utility costs; federal requirement to identify costs (AIMS).

VI. OTHER POTENTIAL USERS

Maintenance, Supply Management, Procurement, Accounting

VII. COST/BENEFIT CONSIDERATIONS

Reduction in maintenance costs, food loss from spoilage, data needed to assess bids - Develop schedules for maintenance.

SUMMARY OF NEED FOR NEW/ADDITIONAL DATA PROCESSING SUPPORT

I. TYPE OF SUPPORT REQUESTED — Average Hourly Labor Rate per Classificati

II. DIVISION — Division of Food Services

III. OVERVIEW OF SERVICES BEING REQUESTED

A means to apply labor charges equitably to schools or users. Assist in developing semi-annual report to MSDE program costs.

IV. CURRENT METHOD OF PROVIDING SERVICE

By employee current rate provided by Payroll inquiry or direct charge.

V. OTHER POTENTIAL USERS

Budget, Accounting, Association Relations

VI. COST/BENEFIT CONSIDERATIONS

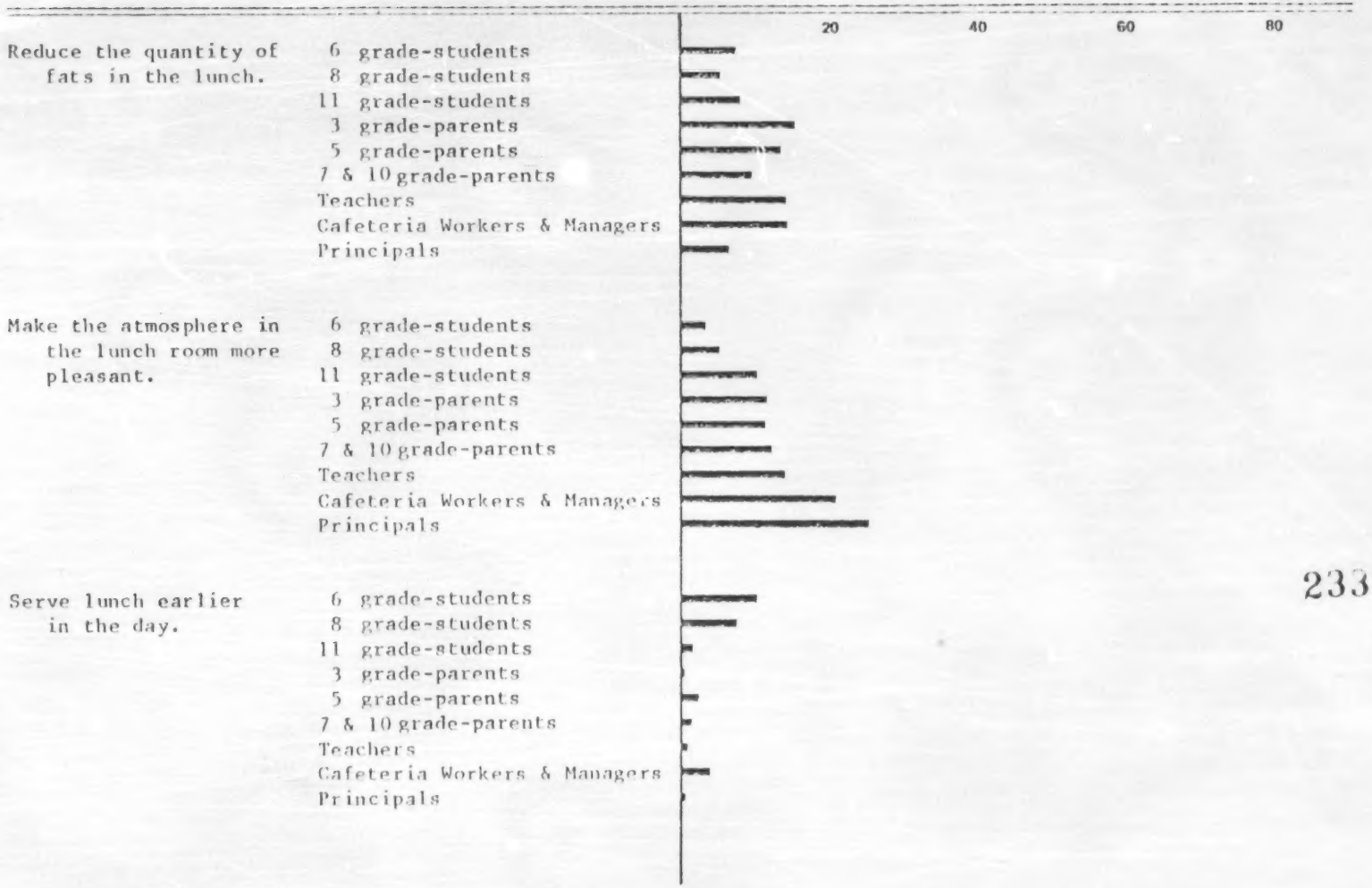
Equalize costs to schools; enhance financial evaluations; improve morale of managers with high labor cost due to long term employee.

VII. SOURCES OF ADDITIONAL INFORMATION

Bill Brown - DEA, Payroll, Association Relations

Appendix E

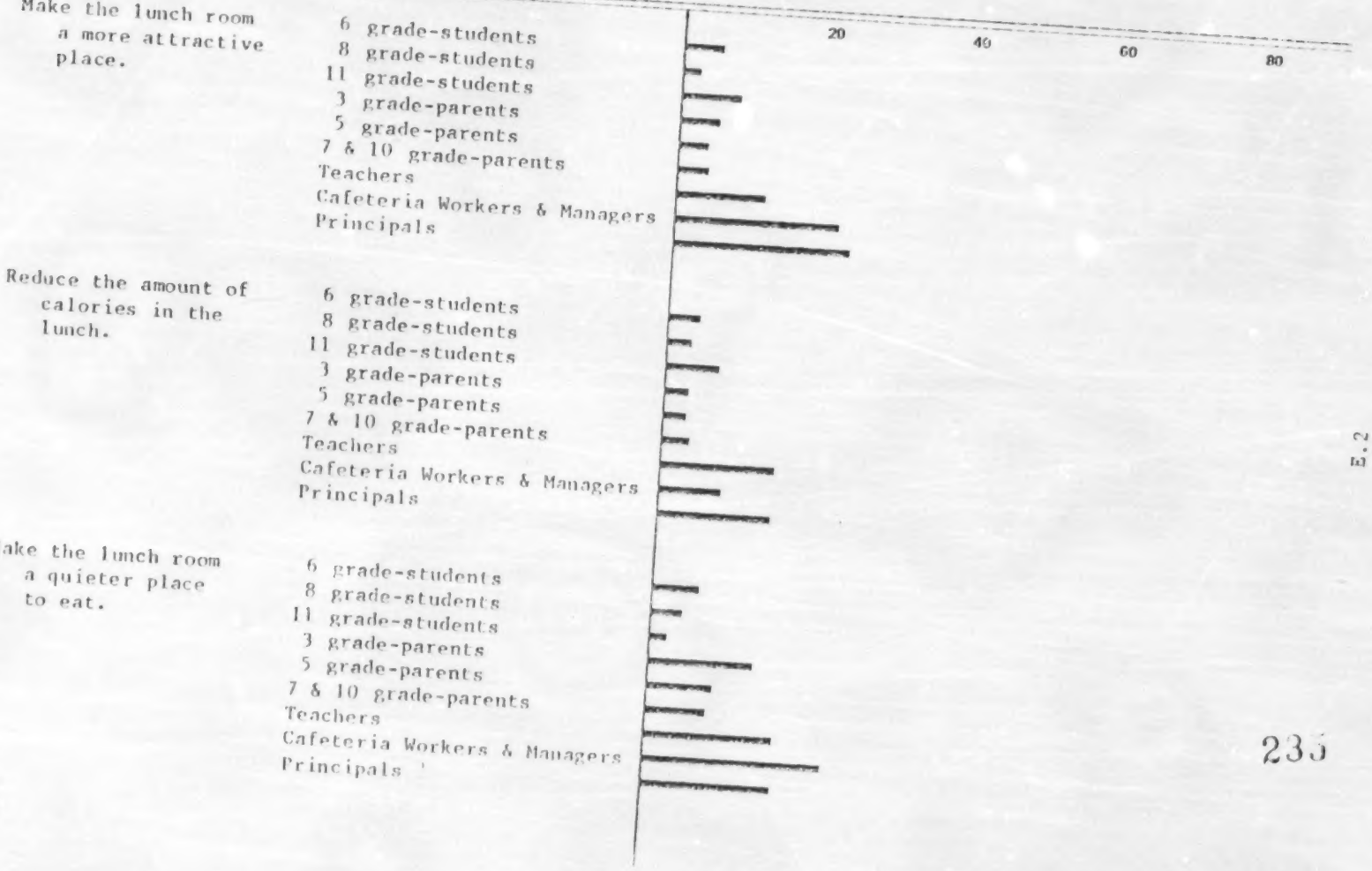
CHANGES NEEDED IN SCHOOL LUNCH PROGRAM



E.1

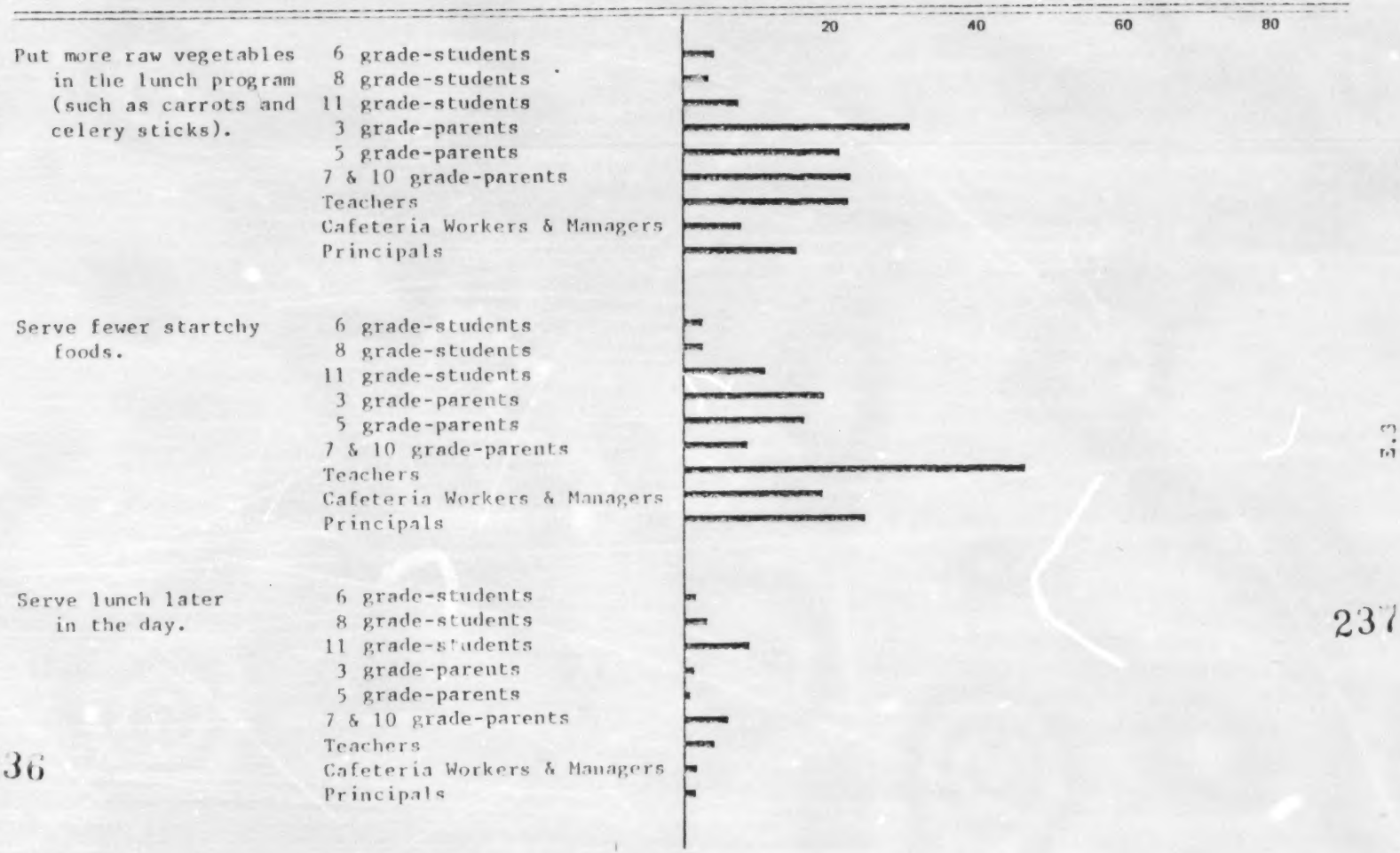
APPENDIX E continued

CHANGES NEEDED IN SCHOOL LUNCH PROGRAM



APPENDIX E continued

CHANGES NEEDED IN SCHOOL LUNCH PROGRAM



APPENDIX E continued

CHANGES NEEDED IN SCHOOL LUNCH PROGRAM

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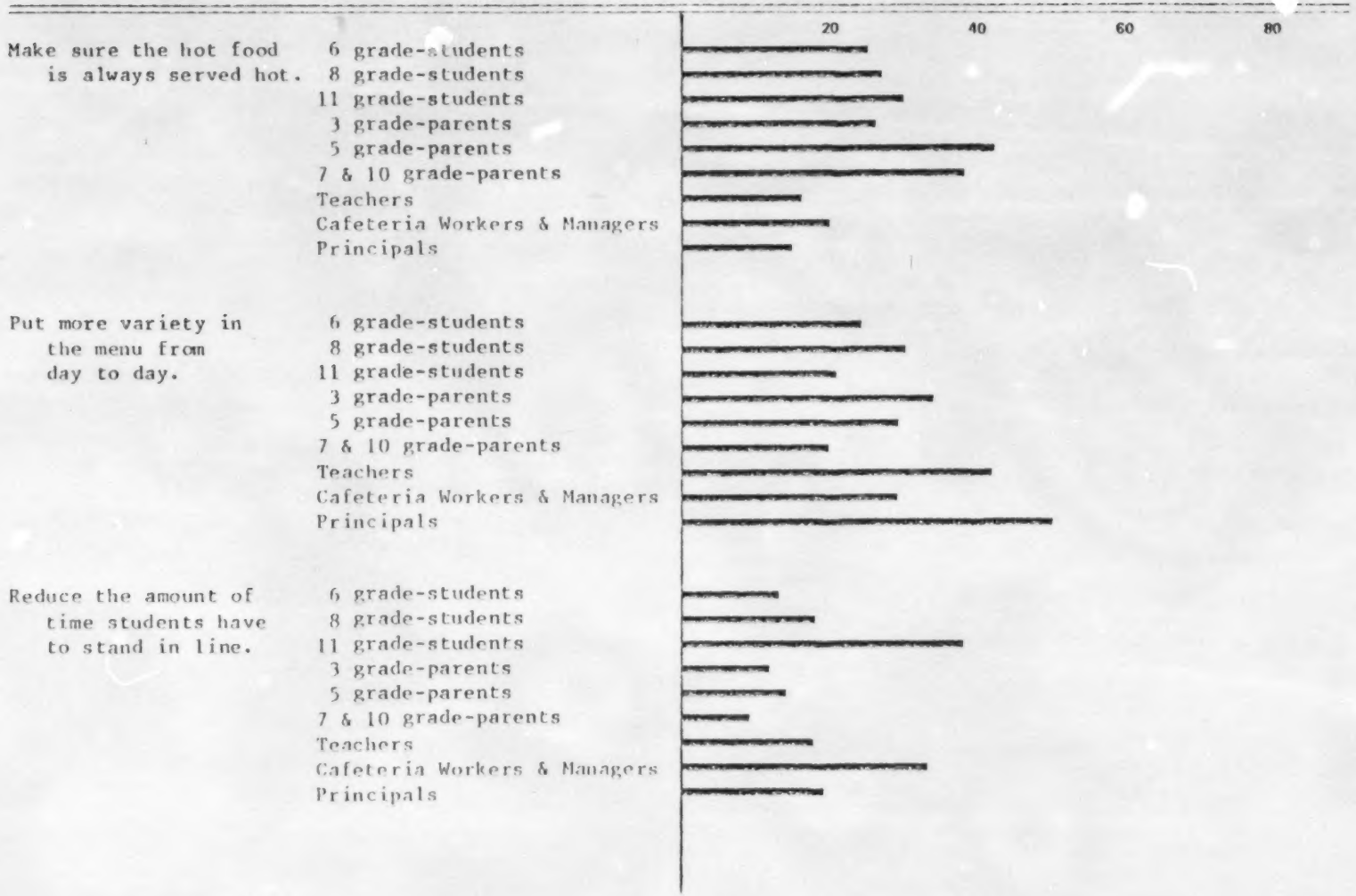
CHANGES NEEDED IN SCHOOL LUNCH PROGRAM



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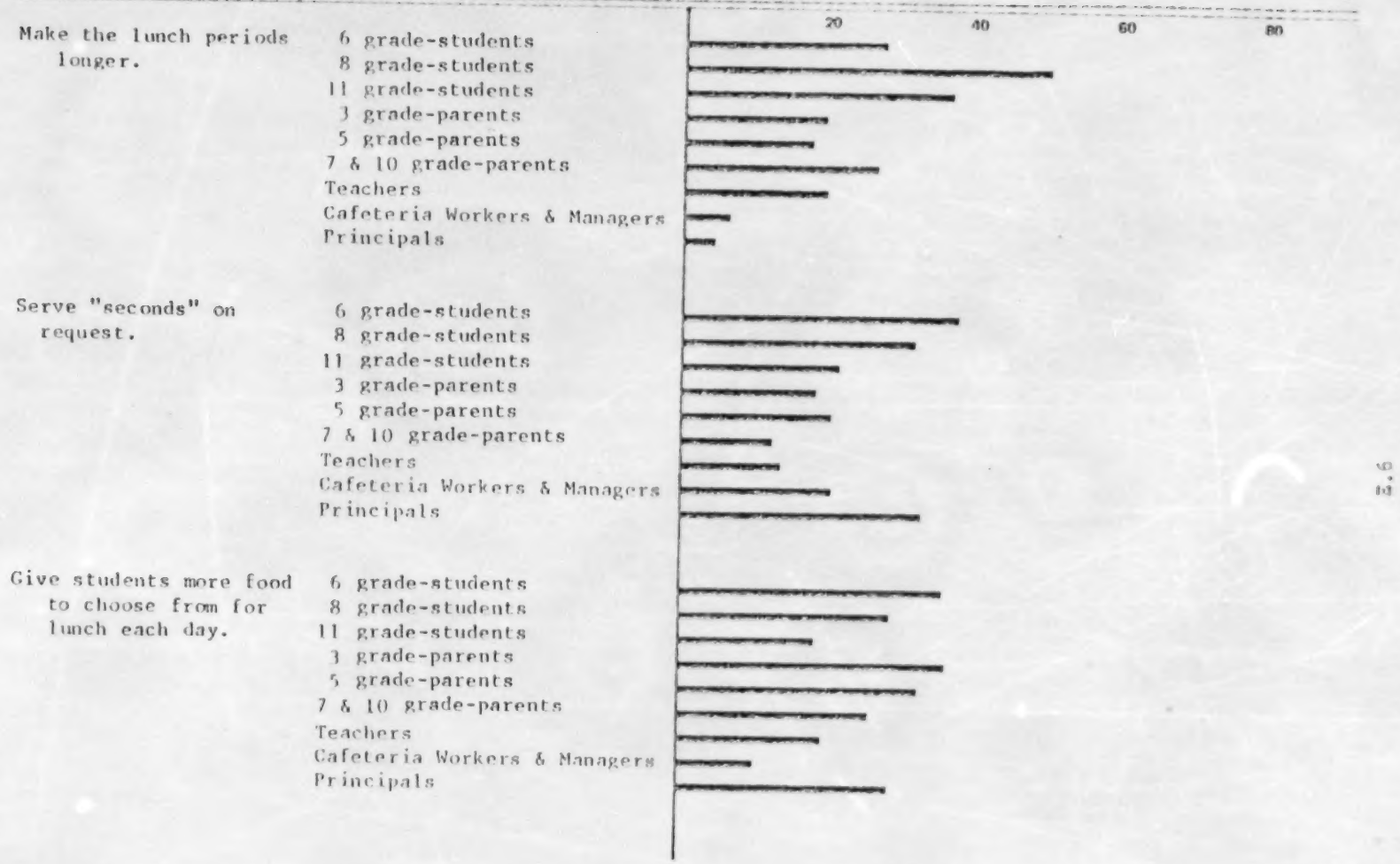
CHANGES NEEDED IN SCHOOL LUNCH PROGRAM



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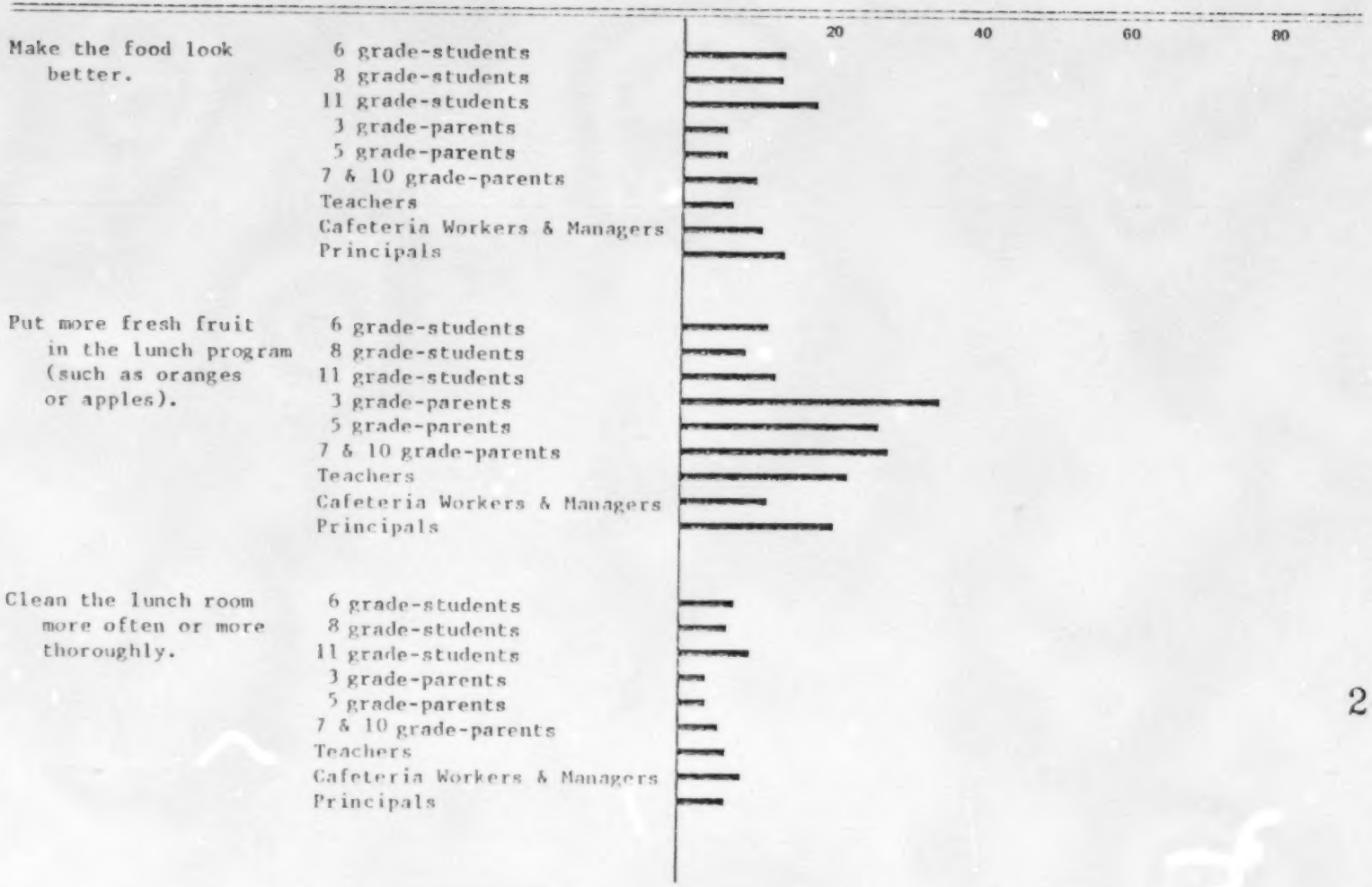
CHANGES NEEDED IN SCHOOL LUNCH PROGRAM



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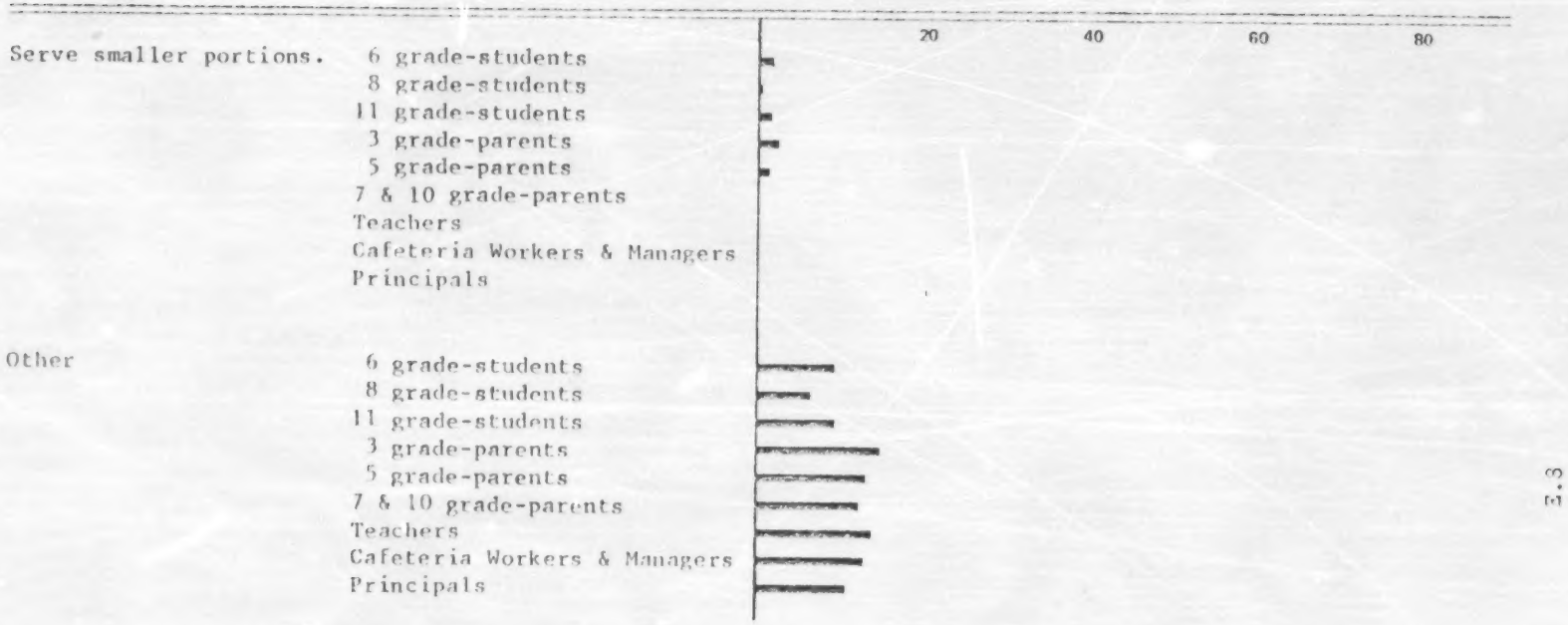
CHANGES NEEDED IN SCHOOL LUNCH PROGRAM



Appendix F

AVERAGE QUANTITY EATEN BY GRADE
REGULAR AND ALTERNATE SCHOOL LUNCHES

Food	1st Grade Mean	1st Grade N	3rd Grade Mean	3rd Grade N	5th Grade Mean	5th Grade N	7th Grade Mean	7th Grade N	10th Grade Mean	10th Grade N
MEAT/PROTEIN										
Cheese, Cottage Cheese	.63	79	.65	212	.75	235	.79	95	-	-
Cheese stick	-	-	.61	20	.77	48	-	-	-	-
Chicken, BBQ	.72	26	-	-	-	-	-	-	-	-
Chicken, fried	.73	78	.74	77	.83	105	-	-	-	-
Chicken, oven-baked	-	-	.74	54	.73	73	-	-	-	-
Burrito filling	-	-	.75	20	.73	48	-	-	-	-
Fish	.68	50	.87	82	.88	89	.79	62	-	-
Flyer Saucer	-	-	-	-	.79	20	-	-	-	-
Gyros	.66	25	.83	28	.96	41	-	-	-	-
Hamburger	.85	67	.82	132	.90	143	.96	19	.99	19
Hot dog	-	-	-	-	.98	23	-	-	-	-
Luncheon meats	-	-	.63	16	.74	17	.90	23	-	-
Macaroni & Cheese	.65	34	.79	28	.84	24	-	-	-	-
Peanut butter (with jelly)	-	-	-	-	-	-	1.01	35	-	-
Peanut butter (without jelly)	-	-	.66	72	.63	80	-	-	-	-
Pizza Topping	.70	124	.87	292	.94	240	.90	84	.89	23
Pork BBQ	-	-	-	-	.89	29	-	-	-	-
Salisbury steak	-	-	.76	34	.90	37	-	-	-	-
Sloppy joe	-	-	.81	72	.73	28	-	-	-	-
Spaghetti with meat sauce	-	-	.91	20	.90	31	.84	32	-	-
Steak & Cheese	-	-	-	-	-	-	.86	35	.94	36
Taco filling and cheese	-	-	.67	15	-	-	.91	34	-	-
Tuna fish salad	.78	20	.75	16	-	-	-	-	-	-
Turkey	-	-	-	-	-	-	.86	44	-	-
Turkey dog	.80	32	.94	36	.96	30	-	-	-	-

AVERAGE QUANTITY EATEN BY GRADE
REGULAR AND ALTERNATE SCHOOL LUNCHES

Food	1st Grade Mean	1st Grade N	3rd Grade Mean	3rd Grade N	5th Grade Mean	5th Grade N	7th Grade Mean	7th Grade N	10th Grade Mean	10th Grade N
VEGETABLES										
Baked Beans	.45	29	.30	45	.43	29	-	-	-	-
Green Beans	-	-	.16	29	.20	55	.44	16	-	-
Bean Salad	-	-	.22	62	.33	80	-	-	-	-
Broccoli	.41	42	.39	48	.31	40	-	-	-	-
Carrot Sticks	-	-	.52	33	.44	35	-	-	-	-
Cooked Carrots	.14	36	.27	23	.22	22	-	-	-	-
Celery Sticks	-	-	.61	79	.61	88	-	-	-	-
Corn	.45	38	.59	109	.56	100	.61	43	-	-
French Fries	.77	93	.84	199	.87	217	-	-	.91	41
Lettuce (on sandwich)	.38	38	.36	49	.32	57	-	-	-	-
Lettuce/green salad	.41	54	.52	82	48	101	.68	134	.66	85
Mixed Vegetables	-	-	.29	66	.37	45	-	-	-	-
Peas	.20	64	.27	67	.20	109	.15	42	-	-
Baked Potatoes	-	-	.62	21	.61	23	.45	30	-	-
Mashed Potatoes	-	-	.54	31	.68	36	.92	36	-	-
Spinach	-	-	.54	34	.46	37	-	-	-	-
Tater Tots	.81	42	.96	128	.90	160	.87	189	.76	27
Tomatoes	-	-	-	-	-	-	-	-	.47	18
FRUIT										
Apple, Fresh	.40	110	.46	154	.50	180	.75	39	-	-
Applesauce	.72	63	.64	121	.71	109	.76	54	-	-
Apricot & Pear Cup	.86	16	.78	24	.79	24	.85	18	-	-
Banana, Fresh	-	-	.67	15	-	-	-	-	-	-
Fruit Bar	.70	32	.62	142	.72	151	-	-	-	-
Fruit Cup, Canned & Mixed Juice	.73	16	.88	51	.98	41	-	-	-	-
Orange or Tangerine, Fresh	.67	93	.63	191	.58	200	.76	30	-	-
Pears, Canned	.78	18	.72	89	.67	54	.75	50	-	-
Peaches, Canned	.66	23	.65	92	.62	38	-	-	-	-
Pineapple Sections, Canned	.72	32	.76	76	.73	104	.87	26	-	-

AVERAGE QUANTITY EATEN BY GRADE
REGULAR AND ALTERNATE SCHOOL LUNCHES

Food	1st Grade Mean	1st Grade N	3rd Grade Mean	3rd Grade N	5th Grade Mean	5th Grade N	7th Grade Mean	7th Grade N	10th Grade Mean	10th Grade N
BREAD										
Corn Bread	-	-	.33	20	-	-	.42	18	-	-
French or Italian Bread	.75	34	.95	49	.97	61	-	-	-	-
Pita Bread	.61	27	.83	35	.92	50	-	-	-	-
Whole Wheat Bread	-	-	-	-	-	-	.83	18	-	-
Macaroni Salad	.39	42	.48	48	.49	51	-	-	-	-
Pizza Dough	.67	130	.87	291	.93	238	.89	84	.88	23
Rice	-	-	.64	65	.62	82	-	-	-	-
Spanish Rice	-	-	-	-	.46	24	-	-	-	-
Dinner Roll	.53	78	.62	136	.63	153	.88	56	-	-
Hamburger Roll	.77	141	.80	361	.85	376	.82	135	.97	30
Hoagie or Submarine Roll	-	-	-	-	-	-	.88	34	.90	36
Hot Dog Roll	.77	32	.92	48	.96	52	.87	15	-	-
Wheat Roll	-	-	.63	43	.63	54	-	-	-	-
Wheat Bread	.72	48	.70	192	.80	193	.90	144	.99	22
Taco Shells	-	-	.45	15	-	-	.91	34	-	-
DESSERT										
Brownies	-	-	-	-	-	-	.96	30	-	-
Cake	-	-	-	-	-	-	.90	82	-	-
Packaged Cakes	-	-	-	-	-	-	.69	38	-	-
Candy Bar	-	-	-	-	.81	16	-	-	-	-
Cookies (Oatmeal, peanut butter, corn meal)	.77	16	.79	90	1.11	65	.89	64	1.06	16
Cookies (Other)	.71	111	.88	209	.95	222	1.07	147	-	-
Doughnuts	-	-	-	-	-	-	1.21	30	-	-
Fruit Crisp	.36	59	.33	56	.44	120	-	-	.59	17
Fruit Juice Bar	-	-	.80	41	.88	53	-	-	-	-
Ice Cream	.96	48	1.02	160	1.03	320	1.01	103	-	-

Appendix F continued

AVERAGE QUANTITY EATEN BY GRADE
REGULAR AND ALTERNATE SCHOOL LUNCHES

Food	1st Grade Mean	1st Grade N	3rd Grade Mean	3rd Grade N	5th Grade Mean	5th Grade N	7th Grade Mean	7th Grade N	10th Grade Mean	10th Grade N
Jello	.89	35	.89	31	1.03	29	-	-	-	-
Pudding	-	-	.89	32	.90	37	.76	67	-	-
SALT SNACKS										
Corn Chips	-	-	-	-	.97	16	-	-	-	-
Peanut Butter/Cheese Cracker	-	-	-	-	1.37	19	-	-	-	-
Potato Chips	-	-	-	-	.76	20	-	-	-	-
BEVERAGES										
Chocolage Milk	.78	423	.82	933	.86	960	.91	367	.97	70
Lowfat Milk	.81	76	.76	191	.80	206	.89	113	.91	41
Fruit Drink	-	-	.99	65	1.00	69	.95	37	-	-
OTHER										
Peanut-Raisin Cup	-	-	.73	34	.80	40	-	-	-	-
Pickles	.70	36	.86	50	.80	32	-	-	-	-
Soup	-	-	.60	47	.71	54	.64	67	-	-